S/M No: CP810P-010

Service Manual

66 Cm STEREO Colour Television

CHASSIS : CP-810

MODEL : DTJ - 28A6F
DTJ - 28A7F
DTJ - 28B1F
DTJ - 28G6F
DTJ - 28G7F
DTJ - 28G8F

DAEWOO ELECTRONICS CO., LTD.
http://svc.dwe.co.kr
MAR,2000

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1. Safety Instruction

WARNING : Only competent service personnel may carry out work involving the testing or repair of this equipment

■ X-RAY RADIATION PRECAUTION

1. Excessive high voltage can prodece potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 23-24kv at max beam current. The high voltage must not, under any circumstances, exceed 30kv.
   Each time a receiver require servicing, the high voltage should be checked. It is improrant to use an accurate and reliable high voltage meter.
2. The only source of X-RAY Radiation in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.

■ SAFETY PRECAUTION

1. Potentials of high voltage are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back board removed involves a shock hazard from the receiver.
   1) Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment.
   2) Dischange the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.
2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the Replacement Parts List.
3. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor 10mm away from circuit board.
4. Keep wires away from high voltage or high temperature components.
5. This receiver must operate under AC230 volts, 50Hz. NEVER connect to DC supply or any other power or frequency.

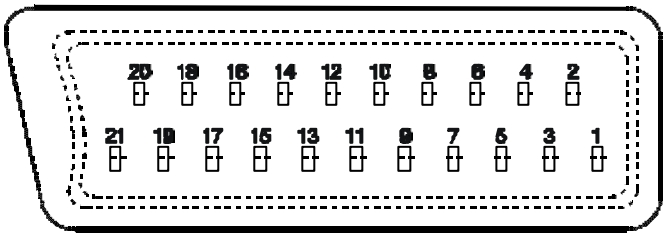
■ PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements, electrical components having such features are identified designated symbol on the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characterisitics as specifide in the parts list may create X-RAY Radiation.

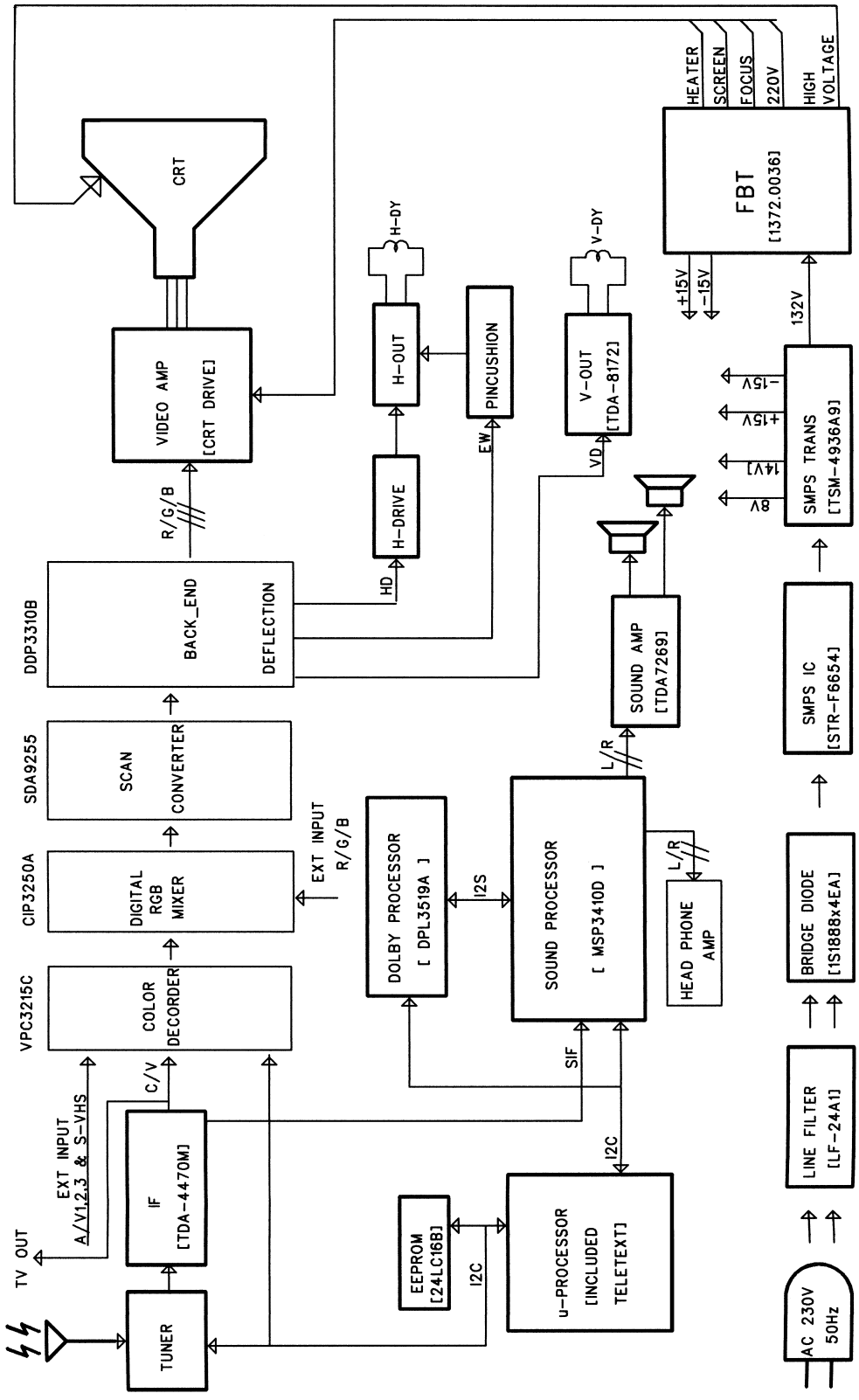
2. Specifications

CRT	28" : A66EAK071X54 (PHILIPS)
System	PAL/SECAM-B/G, D/K, PAL-I/I', SECAM-L/L ' , NTSC-3.58/4.43 (Play back)
Main Voltage	230V AC, 50Hz
Power Consumption	Stand-by mode : 2.0 Watts Normal operating mode : 80 Watts
Sound output	10 + 10 Watts, 10% THD at RF 60% mod. (1 kHz)
Speaker	12W 8ohm x 2 EA
Antenna Impedance	75 ohm unbalanced input (Din Standard)
Tuning system	Frequency Synthesize(FS) Tuning System
Tuner	DT5-BF14D, EL2782-105-B
Number of Program	100 programs
Aux. Terminal	21 pin EURO-SCART jack (AV input, TV output, RGB input) 21 pin EURO-SCART jack (AV input, S-VHS input) RCA type AV input jack Headphone jack (3.5 mm ϕ) JACK AUDIO TERMINAL (AUDIO OUT L, R)
Remote controller	R-22D05 with 2 "AAA" type batteries
Teletext	TOP(5 Page memory) & FLOF(7 Page memory) - West option : English, German/Dutch/Flemish, French, Italian, Spanish/Portuguese, Swedish/Finnish/Danish, Hungarian, Rumanian, Turkish - East option : Polish, Czech/Slovak, Rumanian, Servo-croat, German/Dutch/Flemish, French, Estonian, Lettish
OSD language	- West : English, German, French, Italian, Spanish, Nethelands, Swedish - East : English, Russian, Polish, Rumanian, Czech, Hungarian

PIN	Signal Designation	Matching Value
1	Audio Out (linked with 3)	0.5Vrms, Imp < 1 kΩ (RF 60% MOD)
2	Audio In (linked with 6)	0.5Vrms, Imp < 10 kΩ
3	Audio Out (linked with 1)	0.5Vrms, Imp < 1 kΩ(RF 60% MOD)
4	Audio Earth	
5	Blue Earth	
6	Audio in (linked with 2)	0.5Vrms, Imp < 10 kΩ (RF 60% MOD)
7	Blue in	0.7Vpp ± 2dB, Imp 75Ω
8	Slow (Function) Switching	TV : 0-2V, PERI : 9.5 - 12V, Imp > 10 kΩ
9	Green Earth	
10	NC	
11	Green In	0.7Vpp ±2dB, Imp 75Ω
12	NC	
13	Red Earth	
14	Rapid(Blanking) Switching Earth	
15	Red In, C In	0.7Vpp ± 2dB, Imp 75Ω
16	Rapid(Blanking) switching	Logic 0 : 0 - 0.4V, Logic 1 : 1 - 3V, Imp 75Ω
17	Video Earth	
18	Rapid Blanking Earth	
19	Video Out	1Vpp ± 2dB, Imp 75Ω
20	Video In, Y In	1Vpp ±2dB, Imp 75Ω
21	Common Earth	



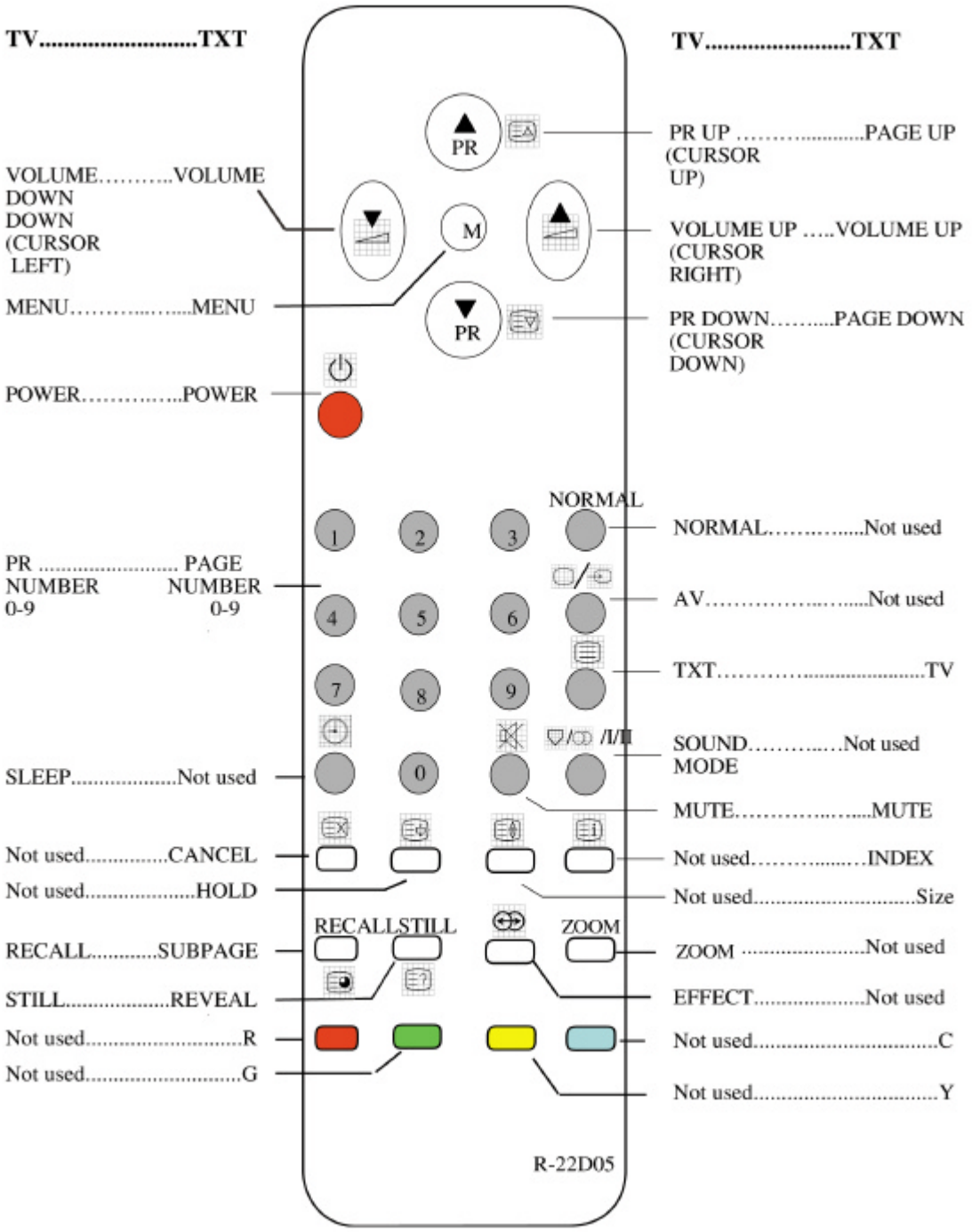
3. Circuit Block Diagram



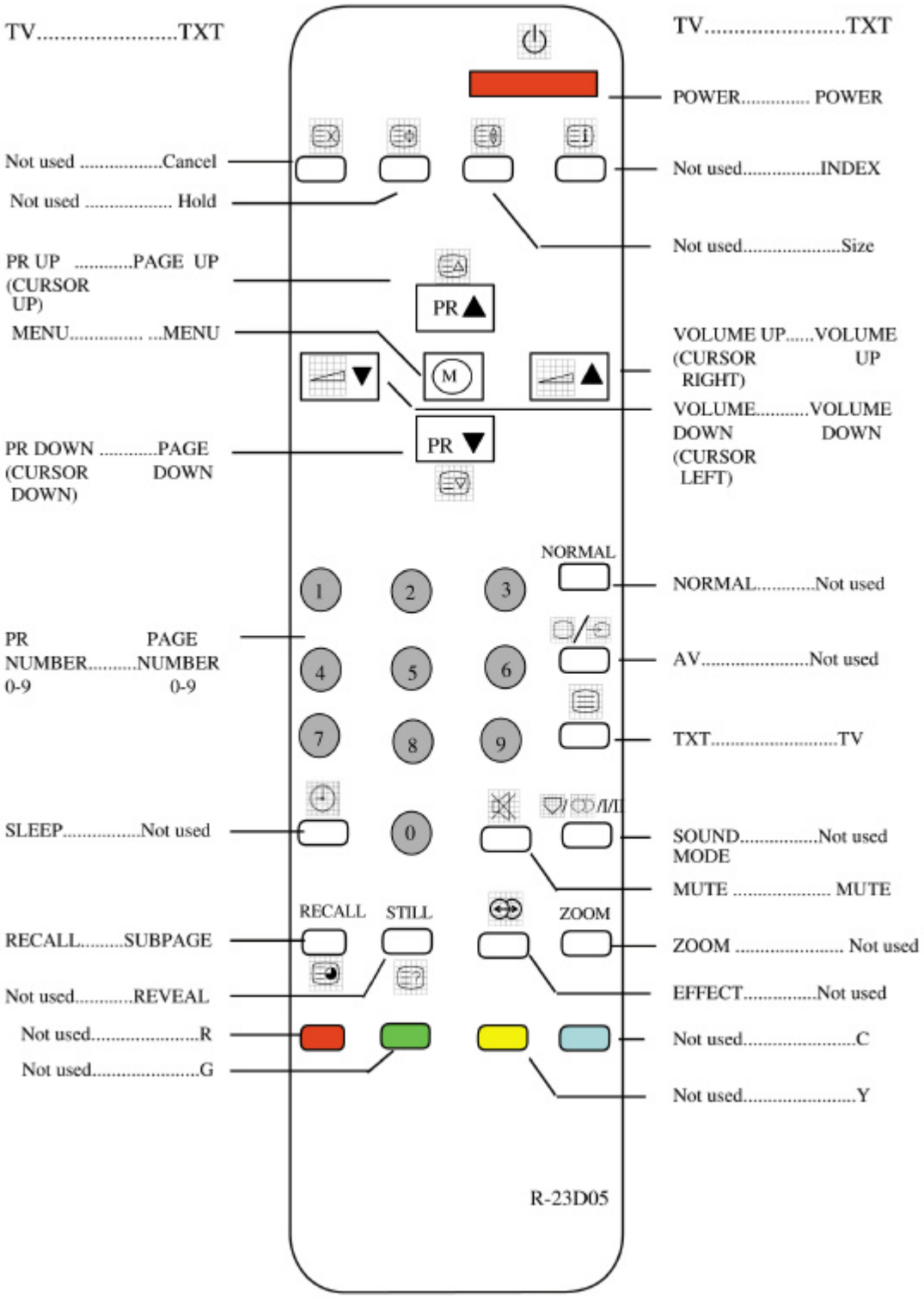
4. Alignment Instructions

4-1. User Remocon

■ R-22D05



■ R-23D05


TV.....TXT
TV.....TXT
POWER..... POWER
Not used .....Cancel
Not used.....INDEX
Not used ..... Hold
Not used.....Size
PR UP .....PAGE UP
(CURSOR
UP)
PR
MENU..... ...MENU
VOLUME UP.....VOLUME
(CURSOR UP
RIGHT)
M
VOLUME.....VOLUME
DOWN DOWN
(CURSOR
LEFT)
PR DOWN .....PAGE
(CURSOR DOWN
DOWN)
PR
NORMAL
NORMAL.....Not used
PR PAGE
NUMBER.....NUMBER
0-9 0-9
1
2
3
4
5
6
7
8
9
0
AV.....Not used
TXT.....TV
SLEEP.....Not used
SOUND.....Not used
MODE
MUTE ..... MUTE
RECALL
STILL
ZOOM
RECALL.....SUBPAGE
ZOOM ..... Not used
Not used.....REVEAL
EFFECT.....Not used
Not used.....R
Not used.....C
Not used.....G
Not used.....Y
R-23D05

Alignment Instructions

* How to Enter the "Service Mode" with user remocon.

1) Set the TV Pr 91

2) Sharpness " MIN " control.

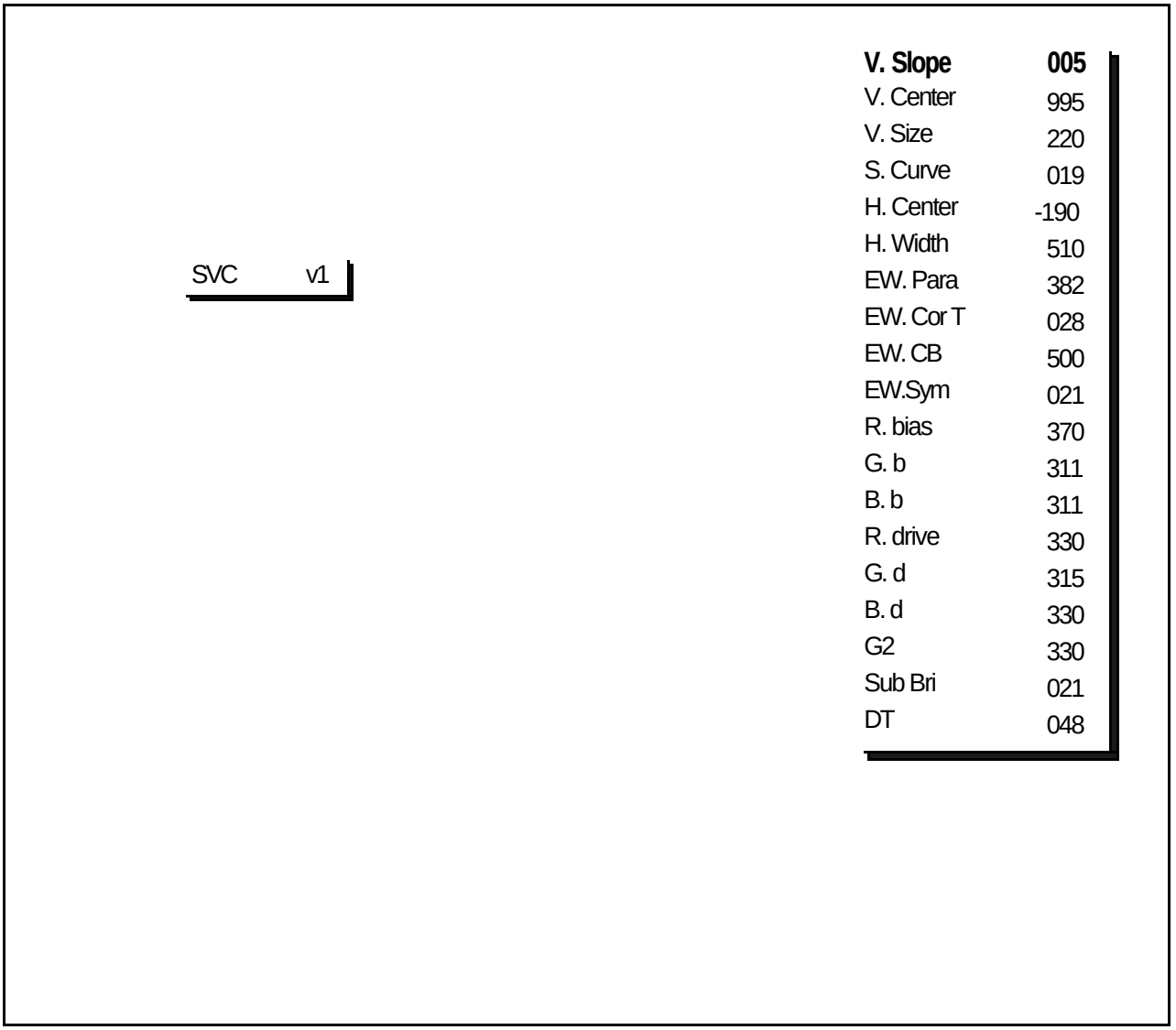
3) Press the Red, Green, Menu buttons in regular sequency within 5 seconds after setting TV power off.

4) You can see the Menu of " Srvice Mode" on the screen.

5) The PR UP/DOWN buttons on the remote controller are used to move the selection bar up or down the Menus.

6) The VOL UP/DOWN buttons on the remote controller are used to adjust levels.

7) If you want to exit from " Service Mode" then power the TV off.



- You can see the SVC Menu by OSD in TV set.

4-2. AFT

Standard B/G, D/K, I and L

1) Set a Signal Generator with
   - RF FREQUENCY = 38.9 MHz,
   - RF OUTPUT LEVEL = 80 ±5dBuV
   - Pattern = Color Bar
   - System = PAL-B/G
2) Connect the Signal Generator RF Output to TP2 (Tuner IF Output).
   There must be no signal input to the tuner.
3) Set the L109 to TP1(I101, #22) with DC Voltage to 2.5V ±0.1V

4-3. AGC

1) Set a Pattern Generator with RF LEVEL 60 ±3dBuV, RF Frequency 210. 25MHz(10CH), Pattern Color Bar.
2) Connect a OSCILLOSCOPE PROBE to P101 (TUNER AGC INPUT).
3) Set the RBOI to P101(Tuner AGC Input) with DC Voltage to 2.8V ±0.2V

4-4. SCREEN (G2)

1) Set a Pattern Generator with - RF Frequency : 210.25MHz (10CH)
   - Pattern : RETMA
2) Select the "G2" in Menu
3) And a Horizontal Line will appear on the screen.
4) Adjust the SCREEN VOLUME on FBT barely to see the Horizontal Line.
5) Press the PR UP/DOWN keys to finish the SCREEN adjustment.

4-5. FOCUS

1) Apply a RETMA PATTERN signal.
2) Adjust the FOCUS VOLUME on FBT to obtain optimal resolution.

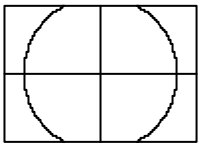
4-6. GEOMETRY

4-6-1 VERTICAL SLOPE (Fixed : Adjust if need be)

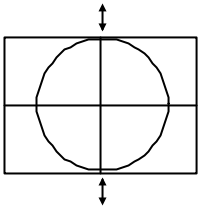
1) Apply a RETMA PATTERN Signal.
2) Set the TV to Normal I mode.
3) Adjust the higher semicircle and the lower semicircle to be the same, with the V.Slope by volume Up/Down keys.

4-6-2 VERTICAL CENTER

1) Apply a RETMA PATTERN Signal.
2) Set the TV to Normal I mode.
3) Adjust the center of the picture with the V.Center by volume Up/Down keys.

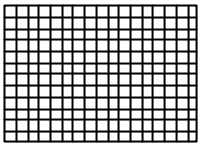


4-6-3 VERTICAL SIZE



* The VERTICAL CENTER adjustment has to be done in advance.
1) Apply a RETMA PATTERN Signal.
2) Set the TV to Normal I mode.
3) Adjust the VERTICAL SIZE of the picture with the select V.size by volume UP/DOWN keys.

4-6-4 VERTICAL S-CORRECTION (Fixed : Adjust if need be)



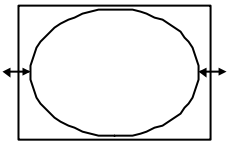
1) Apply a CROSSHATCH PATTERN Signal.
2) Adjust the S-CORRECTION to obtain the same distance between horizontal lines with the S.Curve by volume UP/DOWN keys.

4-6-5 HORIZONTAL CENTER

1) Apply a RETMA PATTERN Signal.
2) Adjust picture centering with the select H.Center by volume UP/DOWN keys.

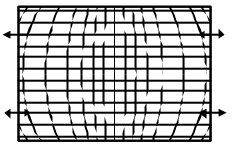
4-7. EW

4-7-1 WIDTH



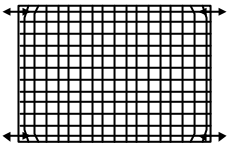
1) Apply a RETMA PATTERN Signal.
2) Adjust the horizontal width to make a perfect circle with the select H.Width by volume UP/DOWN keys.

4-7-2 PARA



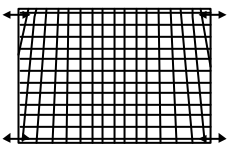
1) Apply a CROSSHATCH PATTERN Signal.
2) Adjust the vertical line to straight with the select E.W Para by volume UP/DOWN keys.

4-7-3 CORNER (Fixed : Adjust if need be)



1) Apply a CROSSHATCH PATTERN Signal.
2) Adjust the vertical line to straight with the select EW.Cor T by volume UP/DOWN keys.

4-7-4 SYMMETRY (Fixed : Adjust if need be)



1) Apply a CROSSHATCH PATTERN Signal.
2) Adjust the symmetrical balance to be suitable with the select EW Sym by volume UP/DOWN keys.

4-8. WHITE BALANCE

4-8-1 RGB Reference R

4-8-2 Beam Reference LOW (288, 301 : 10Cd/m^2)
HIGH (288, 301 : 10Cd/ m^2)

4-8-3 Adjust G, B Gain with select Menu G,B of BIAS, DRIVE of select Menu so that R, G, B Bars are on the center position of the analog meter. If R Analog meter is not on center, control the Brightness +/- of user Remocon so as R Analog meter to be on the center position.

4-9. SUB BRIGHT

4-9-1 Pattern : Retma

4-9-2 Adjust the SUB BRIGHT with the select Sub Bri by volume UP/DOWN keys. so that only H-Center parts of picture can be seen.

4-10. DOUBLE TEXT CENTER

4-10-1 Pattern : Pattern RED

4-10-2 Select Menu

4-10-3 Select DT in SVC menu time to see the Double Text Picture. (Left : RF Picture, Right : Text Picture)

4-10-4 Change the Double Text control keys volume UP/DOWN keys so that the left edge of text picture concur with the right edge of RF picture.

5. IC description

5-1. ST92195

(1) General Description

1.1 INTRODUCTION

The ST92195 microcnontoller is developed and manufactured by STMicroelecrtonics using a proprietary n-well HCMOS process. Its performance derives from the use of a flexible 256-register programming model for ultra-fast context switching and real-time event response. The intelligent onchip peripherals offload the ST9 core from I/O and data management processing tasks allowing critical application tasks to get the maximum use off core resources. The ST92195 MCU supports low power consumption and low voltage operation for power-efficient and low-cost embedded systems.

1.1.1 ST9+Core

The advanced Core consists of the Central Processing Unit (CPU), the Register File and the Interrupt controller. The general-purpose registers can be used as accumulator, Index register, or address pointers. Adjacent register pairs make up 16-bit registers for addressing or 16-bit processing. Although the ST9 has an 8-bit ALU, the chip handles 16-bit operations, including arithmetic, loads/stores, and memory/register and memory/memory exchanges. Two basic memory spaces are available : Program Memory and the Register File, Which includes the control and status registers of the on-chip peripherals.

1.1.2 Power Saving Modes

To optimize performance versus power consumption, a range of operating modes can be dynamically selected.

Run Mode. This is the full speed execution mode with CPU and peripherals running at the maximum clock speed delivered by the phase Locked Loop(PLL) of the Clock Control Unit(CCU).

Wait For Interrupt Mode. The Wait For Interrupt(WFI) instruction suspends program execution until an interrupt request is acknowledged. During WFI, the CPU clock is halted while the peripheral and interrupt controller keep running at a frequency programmable via the CCU. In this mode, the power consumption of the device can be reduced by more than 95%(LP WFI).

Wait For Interrupt Mode. The Wait For Interrupt(WFI) instruction, and if the Watchdog is not enable, the CPU and its peripherals stop operation and the I/O ports enter high impedance mode. A reset is necessary to exit from Halt mode.

1.1.3 I/O Ports

Up to 28 I/O lines are dedicated to digital Input/Output. These lines are grouped into up to five I/O Ports and can be configureed on a bit basis under software control to provide timing, status signals, timer and output, analog inputs, external interrupts and serial or parallel I/O.

1.1.4 TV Peripherals

A set of on-chip peripherals form a complete system for TV set and VCR applications:

- Voltage Synthesis
- VPS/WSS Slicer
- Teletext Slicer
- Teletext Display RAM
- OSD

1.1.5 On Screen Display

The human interface is provided by the On Screen Display module, this can produce up to 26 lines of up to 80 characters from a ROM defined 512 character set. The character resolution is 10x10 dot. Four character sizes are supported. Serial attributes allow the user to select foreground and background. Parallel attributes can be used to select additional foreground and background colors and underline on a character by character basis.

1.1.6 Teletext and Display RAM

The internal 8k Teletext and Display storage RAM can be used to store Teletext pages as well as Display parameters.

1.1.7 Teletext, VPS and WSS Data Slicers

The three on-board data slicers using a single external crystal are used to extract the Teletext, VPS and WSS information from the video signal. Hardware Hamming decoding is provided.

1.1.8 Voltage Synthesis Tuning Control

14-bit Voltage Synthesis using the PWM (Pulse Width Modulation)/BRM (Bit Rate Modulation) technique can be used to genetate tuning voltages for TV set applications. The tuning voltage is output on one of two separate output pins.

1.1.9 PWM Output

Control of TV settings is able to be made with up to eight 8-bit PWM outputs, with a frequency maximum of 23,437Hz at 8-bit resolution(INTCLK 12 MHz). Low resolutions with higher frequency operation can be programmed.

1.1.10 Serial Peripheral Interface (SPI)

The SPI bus is used to communicate with external devices via the SPI, or I^2C bus communication standards. The SPI uses one or two lines for serial data and a synchronous clock signal.

1.1.11 Standard Timer (STIM)

The Standard Timer includes a programmable 16-bit down counter and an associated 8-bit prescaler with Single and Continuous counting modes.

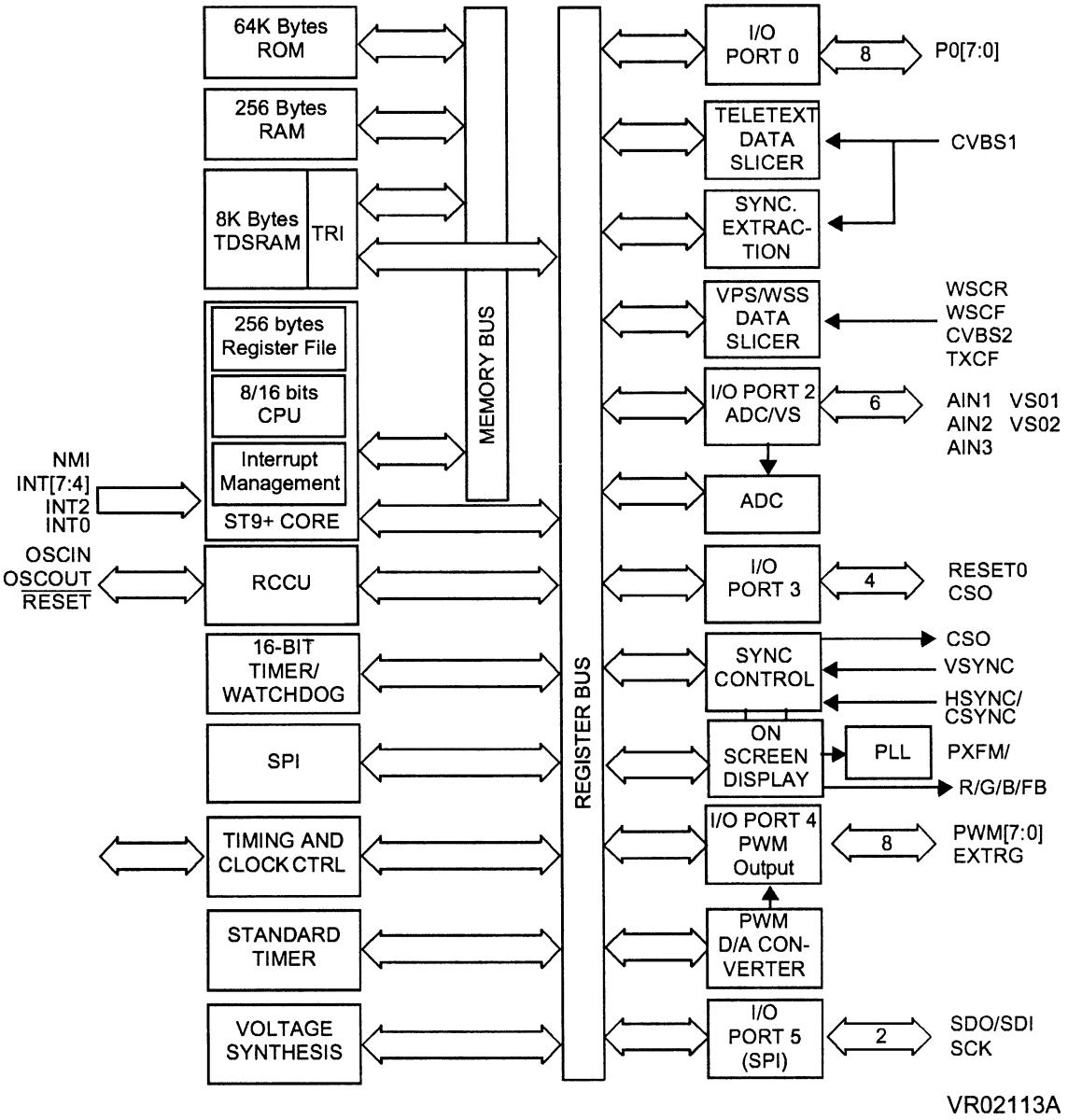
1.1.12 Analog/Digital Converter (ADC)

In addition there is a 3 channel Analog to Digital Converter with integral sample and hold, fast 5.7us conversion timer and 6-bit guaranteed resolution.

(2) Feature

- Register File based 8/16 bit Core Architecture with
- RUN, WFI, SLOW and HALT modes
- 0°C to 70°Coperating temperature range
- Up to 24 MHz Operation @5V ±10%
- Minimum instruction cycle time : 375ns at 16MHz internal clock
- 64K Bytes ROM
- 256 Bytes RAM of Register file(accumulator or index registers)
- 256 Bytes of on-chip static RAM
- 8K Bytes of TDSRAM(Teletext and Display RAM)
- 56-lead Shrink DIP package
- 28 fully programmable I/O pins
- Serial Peripheral Interface
- Flexible Clock controller for OSD, Data Slicer and Core clocks running from one single low frequency external crystal.
- Enhanced Display Controller with 26 rows of 40/80 characters
  - Serial and Parallel attributes
  - 10x10 dot Matrix, 512 ROM characters, definable by user
  - 4/3 and 16/9 supported
  - Rounding, fringe, double width, double height, scrolling, cursor, full background colour, semitransparent mode and reduced intensity colour supported
- Teletext unit, including Data slicer, Acquisition Unit and up to 8K Bytes RAM for Data Storage
- VPS and Wode Screen Signalling slicer
- Integrated Sync Extractor and Sync Controller
- 14-bit Voltage Synthesis for tuning reference voltage
- Up to 6 external interrupts plus 1 non-maskable interrupt
- 8x8-bit programmable PWM outputs with 5V open-drain or push-pull capability
- 16-bit Watchdog timer with 8-bit prescale
- 16-bit standard timer with 8-bit prescaler usable as a Watchdog timer
- 3-channel Analog-to-Digital converter ; 6-bit guaranteed
- Rich instruction set and 14-Addressing modes
- Versatile Development Tools, including Assembler, Linker, C-compiler, Archiver, Source Level Debugger and Hardware Emulators with Real-Time Operating System available from third parties
- Piggyback board available for prototyping

(3) Block Diagram



(4) PIN DESCRIPTION

$\overline{\text{RESET}}$ *Reset* (input, active low). The ST9+ is initialised by the Reset signal. With the deactivation of RESET, program execution begins from the Program memory location pointed to by the vector contained in program memory locations 00h and 01h.

R/G/B *Red/Green/Blue.* Video color analog DAC outputs

FB *Fast Blanking.* Video analog DAC output.

VOD Main power supply voltage(5V 10%, digital)

WSCF, WSCR Analog pins for the VPS/WPP slicer line PLL.

MCFM Analog pin for the display pixel frequency multiplier.

OSCIN, OSCOUT *Oscillator* (input and output).
These pins connect a parallel-resonant crystal(24MHz maximum), or an external source to the on-chip clock oscillator and buffer. OSCIN is the input of the oscilltor inverter and internal clock generator; OSCOUT is the output of the oscillator inverter.

VSYNC *Vertical Sync.* Vertical video synchronisation input to OSD. Positive or negative polarity.

HYNC/CSYNC *Horizontal/Composite sync.* Horizontal or composite video synchronisation input to OSD. Positive or negativety.

PXFM Analog pin for the Display Pixel Frequency Multiplier

AVDD *Analog VDD of PLL.* This pin must be tied to VDD externally to the ST92195.

GND Digital circuit ground.

AGND Analog circuit ground(must be tied externally to digital GND).

CVBS1 Composite video input signal for the Teletext slicer and sync extraction.

CVBS2 Composite video input signal for the VPS/WSS slicer. Pin AC coupled.

AVDD1, AVDD2 Analog power supplies(must be tied externally to AVDD).

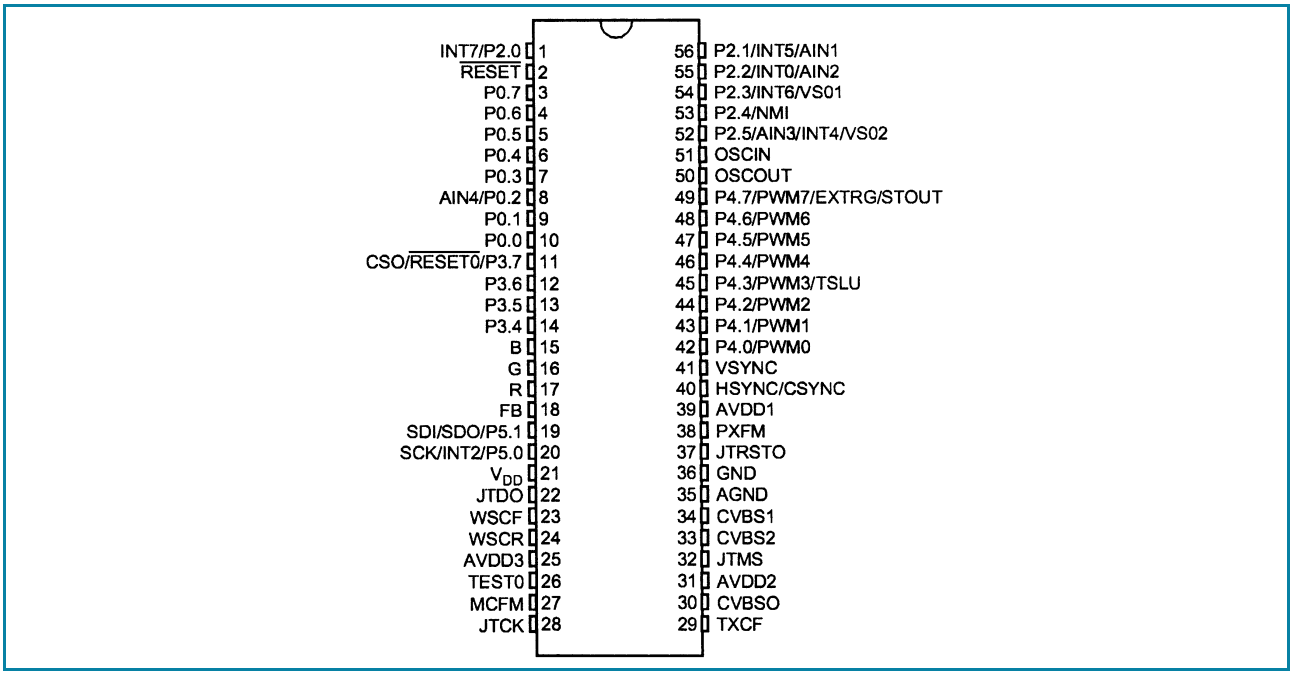
TXCF Analog pin for the VPS/WSS line PLL.

CVBSO, JTDO, JTCK Test pins : leave floating.

JTMS, TEST0 Test pins : must be tied to AVDD2.

JTRST0 Test pin : must be tied to GND.

Figure 2. Pin Description



5-2. VPS 3215C(Video Processor)

(1) Description

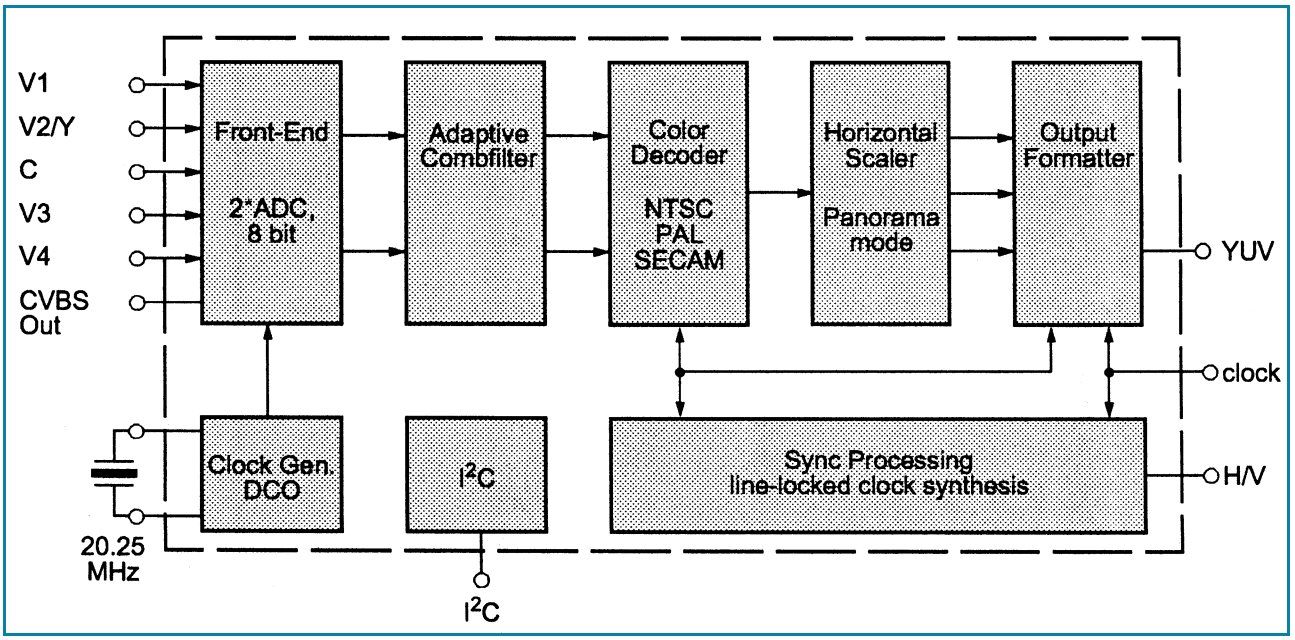
The VPC 3215C is a high-quality, single-chip video front-end, which is targeted for 4:3 and 16:9, 100/120Hz TV sets.

It can be conbined with other members of the DIGIT3000 IC family (such as CIP 3250A, DDP 3300A, TPU 3040) and/or it can be used with 3rd-party products.

(2) Features

- all-digital video processing
- high-performance adaptive 4H comb filter Y/C separator with adjustable vertical peaking
- multi-standard color decoder PAL/NTSC/SECAM including all substandards
- 4 composite, 1 S-VHS input, 1 composite output
- integrated high-quality A/D converters and associated clamp and AGC circuits
- multi-standard sync processing
- linear horizontal scaling (0.25 ... 4), as well as non-linear horizontal scaling ' panorama vision'
- PAL + preprocessing (VPC 3215)
- submicron CMOS technology

(3) Block Diagram



(4) Pin Descriptions

Pin 1 - Ground, Analog Front-End GND_F

Pin 2 - Ground, Analog Front-End GND_F

Pin 3 - CCU 5 MHz Clock Output CLK5

This pin provides a clock frequency for the TV microcontroller, e.g. a CCU 3000 controller, It is also used by the DDP 3300A display controller as a standby clock.

Pin 4 - Standby Supply Voltage V_{STDBY}

In standby mode, only the clock oscillator is active, GND_F should be ground reference. Please activate RESQ before powering-up other supplies Pins 6 and 5-XTAL1 Crystal Input

These pins are connected to an 20.25MHz crystal oscillator which is digitally tuned by integrated shunt capacitances. The CLK20 and CLK5 clock signals are derived from this oscillator. An external clock can be fed into XTAL1. In this case, clock frequency adjustment must be switched off.

Pin 7 - Ground, Analog Front-End GND_F

Pin 9 - Ground, Output Pad Circuitry GND_P

Pin 10 - Interlace Output, INTLC

This pin supplies the interlace information, 0 indicates first field, 1 indicates second field.

Pin 12 - Vertical Sync Pulse, VS
This pin supplies the vertical sync signal.
Pin 13 - Front Sync Pulse, FSY
This pin supplies the front sync information.
Pin 14 - Main Sync/Horizontal Sync Pulse MSY/HS
This pin supplies the horizontal sync pulse information in line-locked mode. In DIGIT3000 mode, this pin is the main sync input.
Pin 15 - Helper Line Output, Helper
This signal indicated a helper line in PAL + mode.
Pin 16 - Horizontal Clamp Pulse, HC
This signal can be used to clamp an external video signal, that is synchronous to the input signal. The timing is programmable.
Pin 17 - Active Video Output, AVO
This pin indicates the active video output data. The signal is clocked with the LLC1 clock.
Pin 18 - Double Output Clock, LLC2
Pin 19 - Output Clock, LLC1
This is the clock reference for the luma, chroma, and status outputs.
Pin 26 - Ground, Output Pad Circuitry GND_P
Pin 20 to 25,28,29 - Luma Output Y0-Y7
These output pins carry the digital luminance data. The data are clocked with the LLC1 clock.
Pin 30 - Main Clock Output CLK20
This is the 20.25MHz main clock output.
Pin 31 - Supply Voltage, Digital Circuitry V_{SUPD}
Pin 34 - Ground, Digital Circuitry GND_D
Pin 35 - Ground, Output Pad Circuitry GND_P
Pin 36 - Supply Voltage, Output Pad Supply V_{SUPP}
Pin 38 to 43,46,47 - Chroma Outputs C0-C7
These outputs carry the digital CrCb chrominance data. The data are clocked with the LL1 clock. The data are sampled at half the clock rate and multiplexed. The CrCb multiplex is reset for each TV line.
Pin 48 to 50 - Picture Bus Priority PR0-PR2
The Picture Bus Priority lines carry the digital priority selection signals. The priority interface allows digital switching of up to 8 sources to the back-end processor. Switching for different sources is prioritized and can be on a per pixel basis.
Pin 51 - Ground, Output Pad Circuitry GND_P
Pin 52 - VGAV-Input.
This pin is connected to the vertical sync signal of a VGA signal.
Pin 53 - Front-End/Back-End Data FPDAT
This pin interfaces to the DDP 3300A back-end processor. The information for the deflection drives and for the white drive control, i.e. the beam current limiter, is transmitted by this pin.
Pin 54 - Reset Input RESQ
A low level on this pin resets the VPC 32xx.
Pin 55 - I^2CBus Data SDA
The pin connects to the I^2Cbus data line.
Pin 57 - Test Input TEST
This pin enables factory test modes. For normal operation, it must be connected to ground.
Pin 59 - Ground, Analog Front-End GND
Pins 62,61,60,58 - Video 1-4
These are the analog video inputs. A CVBS or S-VHS luma signal is converted using the luma (Video 1) AD converter. The VIN1 input can also be switched to the chroma (Video 2) ADC. The input signal must be AC-coupled.
Pin 63 - Chroma Input CIN
This pin is connected to the S-VHS chroma signal. A resistive divider is used to bias the input signal to the middle of the converter input range. CIN can only be connected to the chroma (Video 2) A/D converter. The signal must be AC-coupled.
Pin 64 - Analog Video Output, VOUT
The analog video signal that is selected for the main (luma, CVBS) ADC is output at this pin. An emitter follower is required at this pin.
Pin 65 - Ground, Analog Shield Front-End GND
Pin 66 - Supply Voltage, Analog Front-End V
Pin 67 - Signal GND for Analog Input ISGND
This is the high quality ground reference for the video input signals.
Pin 68 - Reference Voltage Top VRT
Via this pin, the reference voltage for the A/D converters is decoupled. The pin is connected with 10uF/47nF to the Signal Ground Pin.

5-3. CIP3250A (Component Interface Processor)

(1) Description

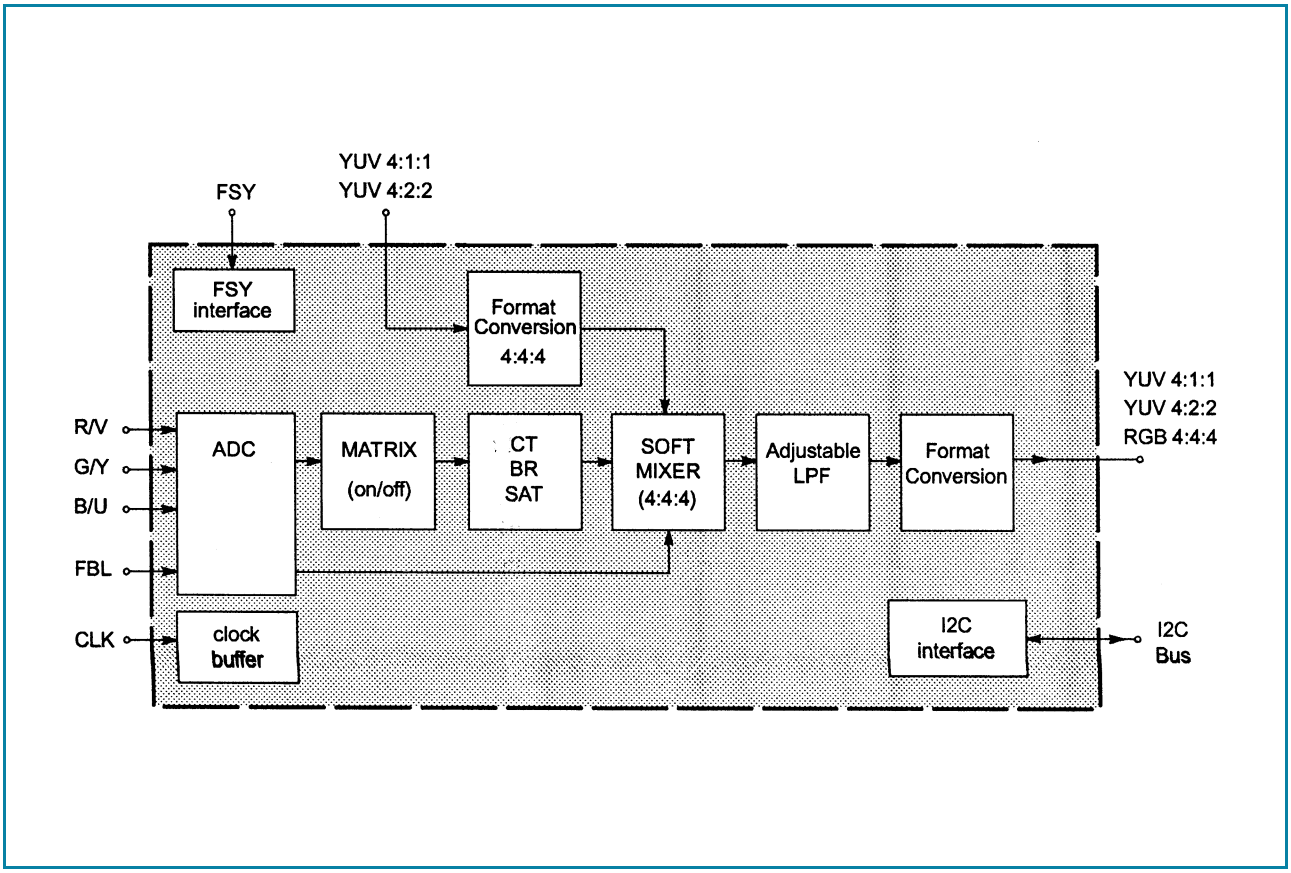
The CIP 3250A is a new CMOS IC that contains on a single chip the entire circuitry to interface analog YUV/RGB/ Fast Blank to a digital YUV system. The Fast Blank signal is used to control a soft mixer between the digitized RGB and an external digital YUV source. The CIP supports various output formats such as YUV 4:1:1/4:2:2 or RGB 4:4:4.

Together with the DIGIT 3000 (e.g. VPC 32xxA) or DIGIT 2000 (e.g. DTI 2250), an interface to a TV-scanrate conversion circuit and/or multi-media frame buffer can be obtained.

(2) Feature

- analog input for RGB or YUV and Fast Blank
- triple 8 bit analog to digital converters for RGB/YUV with internal programmable clamping
- single 6 bit analog to digital converter for Fast Blank singnal
- digital matrix RGB > YUV (Y, B-Y, R-Y)
- luma contrast and brightness correction for signals from analog input
- color saturation and hue correction for signals from analog input
- digital input for DIGIT 2000 or DIGIT 3000 formats
- digital interpolation to 4:4:4 format
- high quality soft mixer controlled by Fast Blank signal
- programmable delays to match digital YUV in and analog RGB/YUV
- variable low pass filters for YUV output
- digital output in DIGIT 2000 and DIGIT 3000 formats, as well as RGB 4:4:4
- I^2C bus interface
- clock frequency 13.5...20.25 MHz

(3) Block Diagram



(4) Pin Description

Pin 1 - STANDBY Input
Via this input pin, the standby mode of the CIP 3250A is enabled. A high level voltage switches all outputs to tristate mode, and power consumption is signigicantly reduced. When the IC IS returned to active mode, a reset is generated internally. Connect to VSS if not used.

Pins 2 to 9 - B7 to B0 Blue Output
In a stand alone application, where the CIP 3250A serces as an A/D-converter, these are the output for the digital Blue signal (pure binary) or the digital U signal (2's complement). Leave vacant if not used.

Pin 10 to 17 - GL7 to GL0 Green/Luma Output
At these outputs, the digital luminance signal is received in pure binary cided format for DIGIT 2000 and DIGIT 3000 applications. In a stand alone application, where the CIP 3250A serves as an A/D-converter, these are the outputs for the digital Green signal(pure binary) or the digital luma signal(pure binary). Leave vacant if not used.

Pin 18 - PVSS Output Pin Ground
This is the common ground connection of all output stages and must be connected to ground.
Note : All ground pins of the chip (i.e. 18,52,58,60,62,64,66 and 68) must be connected together low resistive. The layout of the PCB must take into consideration the need for a low-noise ground.

Pin 19 - PVDD Output Pin Supply + 5V/+3.3V
This pin supplies all output stages and must be connected to a positive supply voltage.
Note : The layout of the PCB must take into consideration the need for a low-noise supply. A bypass capacitor has to be connected between ground and PVDD

Pins 20 to 27 - RC7 to RC0 Red/Chroma Output
These are the outputs for the digital chroma signal in the DIGIT 3000 system, where U and V are multiplexed bytewise. In a DIGIT 2000 system, RC3 to RC0 and RC7 to RC4 carry the halfbyte(nibble) multiplex format. In a stand alone application, where the CIP 3250A serces as an AD-converter, these are the outputs for the digital Red signal(pure binary) or the digital chroma V signal (2's component). Leave vacant if not used.

Pin 29 - AVI Active Video Input
In a DIGIT 2000 application, this input can be connected to ground. In a DIGIT 3000 application, this input expects the DIGIT 3000 AVI signal. In a stand alone application, this input expects the VSYNC vertical sync pulse. Connect ground if not used.

Pin 30 - FSY Front Sync Input
In a DIGIT 2000 application, this input pin expects the DIGIT 2000 SKEW protocol. In a DIGIT 3000 application, this input expects the DIGIT 3000 FSY protocol. In a stand alone application, this unput expects the HSYNC horizontal sync pulse. Connect to ground if not used.

Pin 31 to 32 - SDA and SCL of I^2CBus
These pins connect to the I^2Cbus, which takes over the control of the CIP 3250A via the internal registers. The SDA pin is the data input/output, and the SCL pin is the clock input/output of I^2Cbus control interface. All registers are writerable(except address hex27) and readable.

Pin 33 to 35 - PRIO0 to PRIO2 Priority Bus
These pins connect to the Priority Bus of a DIGIT 3000 application. The Picture Bus Priority lines carry the digital priority selection signals. The priority interface allows digital switching of up to 8 sources to the backend processor. Switching for different sources is prioritized and can be on a per pixel basis. In all other applications, they must not be connected.

Pin 36 to 43 - C0 to C7 Chroma Input
These are the inputs for the digital chroma signal which can be received in binary offset or 2's complement coded format. In a DIGIT 2000(4:1:1) system, C3 to C0 take the halfbyte (nibble) multiplex format. C7 to C4 have to be connected to ground. Within the DIGIT 3000(4:2:2) system, U and V are multiplexed bytewise. Connect to ground if not used.

Pin 44 to 51 - L0 to L7 Luma Input
These are the inputs for the digital luma signal which must be in pure binary coded format. Connect to ground if not used.

Pin 52 - DVSS Digital Ground
This is the common ground connection of all digital stages and must be connected to ground.
Note : All ground pins of the chip(i.e. 18, 52, 58, 60, 62, 64, 66, and 68) must be connected together low resistive. The layout of the PCB must take into consideration the need for a low-noise ground.

Pin 53 - DVDD Digital Supply +5V
This pin supplies all digital stages and must be connected to a positive supply voltage.
Note : The layout of the PCB must take into consideration the need for a low-noise supply. A bypass capacitor has to be connected between ground and DVDD.

Pin 54 - CLK Main Clock Input
This is the input for the clock signal. The frequency and vary in the range from 13.5MHz to 20.25MHz.

Pin 55 - RESQ Input
A low signal at this input pin generates a reset. The low-to-high transition of this signal should occur when the supply voltage is stable(power-on reset).

Pin 56 - TMODE Input
This pin is for test purposes only and must be connected to ground in normal operation.

Pin 57 - AVDD Analog Supply +5V
This is the supply voltage pin for the A/D converters and must be connected to a positive supply voltage.
Note : The layout of the PCB must take into consideration the need for a low-noise supply. A bypass capacitor has to be connected between ground and AVDD.

Pin 58 - AVSS Analog Ground
This is the ground pin for the A/D converters and must be connected to ground.
Note : All ground pins of the chip (i.e. 18,52,58,60,62,64, 66, and 68) must be connected together low resistive. The layout of the PCB must take into consideration the need for a low-noise ground.

Pin 59 - ADREF Connect External Capacitor
This pin should be connected to ground over a 10uF and a 100nF capacitor in parallel.

Pin 60 - SUBSTRATE
This is connected to the platform which carries the " die" and must be cvonnected to the ground.
Note : All ground pins of the chip(i.e. 18,52,58,60,62,64,66, and 68) must be connected together low resistive. The layout of the PCB must take into consideration the need for a low-noise ground.

Pin 61 - FB Analog Fast Blank Input
This input takes the DC-coupled analog Fast Blank signal. The amplitude is 1.0V maximum at 75 Ohms. Connect to ground if not used.

Pin 62 - GNDFB Analod Ground
This is the ground pin for the AD converter of the Fast Blank signal and has to be connected to ground.
Note : All ground pins of the chip (i.e. 18,52,58,60,62,64, 62,64,66 and 68) must be connected together low resistive. The layout of the PCB must take into consideration the need for a low-noise ground.

Pin 63 - BU Analog Blue/U Chroma Input
The input pin takes the AC-coupled analog compont signal Blue or U Chroma. The amplitude is 1.0V maximum at 75 Ohms and a coupling capacitor of 220 nF. Internally, the DC-offset of the input signal is adjusted via the programmable internal clamping circuit. Connect to ground if not used.

Pin 64 - GNDBU Analog Ground
This is the ground pin for the A/D converter of the Blue or U Chroma signal and must be connected to ground.
Note : All ground pins of the chip(i.e. 18,52,58,60,62,64,66, and 68) must be connected together low resistive. The layout of the PCB must take into consideration the need for a low-noise ground.

Pin 65 - GY Analog Green/Luma Input
This input pin takes the AC-coupled analog compinent signal Green or Luma. The amplitude is 1.0V maximum at 75 Ohms and a couplign capacitor of 220nF. Internally, the DC-offset of the input signal is adjusted via the programmable internal clamping circuit. Connect to ground if not used.

Pin 66 - GNDGY Analog Ground
This is the ground pin for the A/D converter of the Green or Luma signal and must be connected to ground.
Note : All ground pins of the chip(i.e. 18,52,58,60,62,64, 66, and 68) must be connected together low rresistive. The layout of the PCB must take into consideration the need for a low-noise ground.

Pin 67 - RV Analog Red/V Chroma Input
This input pin takes the AC-coupled analog component signal Red or V Chroma. The amplitude is 1.0V maximum at 75ohms and a coupling capacitor of 220nF. Internally, the DC-offset of the input signal is adjusted via the programmable internal clamping circuit. Connect to ground if not used.

Pin 68 - GNDRY Analog Ground
This is the ground pin for the A/D converter of the Red or V Chroma signal and must be connected to ground.
Note : All ground pins of the chip (i.e. 18,52,58,62,64,66, and 68) must be connected together low resistive. The layout of the PCB must take into consideration the need for a low-noise ground.

5-4. SDA9255 (Scan Rate Converter)

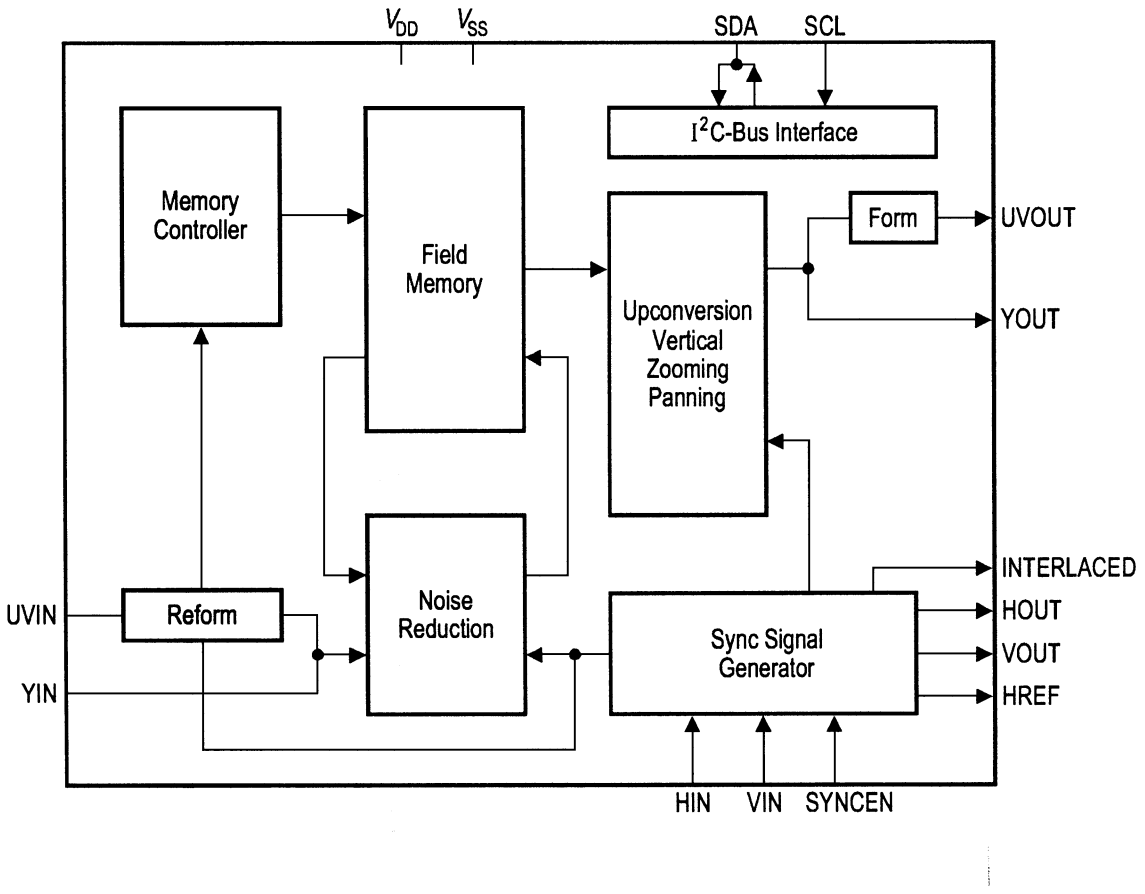
(1) Features

- 100/120 Hz interlaced scan conbersion
- Data format 4:1:1
- On chip field memory
- Digital vertical zooming
- Digital vertical panning]
- Motion adaptive temporal noise reduction, field based
- Still field
- Color difference input data representation 2's complement or unsigned
- Color difference output data representation 2's complement or unsigned
- Sync Generation for backend IC
- I^2C - Bus control (400 kHz)
- P-MQFP-64 package
- 5V ± 5% supply voltage

(2) General Description

The SDA 9255 is a new component of the Siemens MEGAVISION ºIC set. The SDA 9255 comprises some of the functionalities of the MEGAVISION ºIC's SDA 9220 (Memory Sync Controller) and SDA 9254 (Triple TV-SAM plus Noise Reduction) and can therefore be used as a low cost digital featurebox.

(3) Block Diagram



(4) Pin Description

Pin No.	Name	Type	Description
2,8,24,26,41,55 ,57	V_{SS}	S	Supply voltage (V_{SS} 0V)
9,25,40,56	V_{DD}	S	Supply voltage (V_{DD} 5V)
42,...,49	YIN0 ... 7	I/TTL	Data input Y (**see data format**)
36,...,39	UVIN4 ... 7	I/TTL	Data input UV (**see data format**)
30	SYNCEN	I/TTL	Synchronizarion enable input
31	RESET	I/TTL	System reset. The RESET input is low active. In order to ensure correct operation a " Power On Reset" must be performed. The RESET pulse must have a minimum duration of two clock periods of the system clock (LL2CLK).
23	HIN	I/TTL	H-Sync input
22	VIN	I/TTL	V-Sync input
21	SDA	I/O	I^2C - Bus data line
20	SCL	I	I^2C - Bus clock line
19	TESTIN	I/TTL	Test input, connect to V_{SS} for normal operation
18	TESTEN	I/TTL	Test enable input, connect to V_{SS} for normal operation
13,...10	UVOUT4	O/TTL	Data output UV (**see data format**)
7,...,3,1,64,63	YOUT0 ... 7	O/TTL	Data output Y (**see data format**)
62	HREF	O/TTL	Horizontal active video output
61	VOUT	O/TTL	V-Sync output
60	HOUT	O/TTL	H-Sync output
59	INTERLACED	O/TTL	Interlace signal for AC coupled vertical deflection
58,51	LL2CLK	I/TTL	System clock
50	TEST	I/TTL	Test input, connect to V_{SS} for normal operation
27,28,,29,52,53 ,54	TESTO 4 ... 9	O	Do not connect, Pin have to be left open
14,15,16,17	TESTO 0 ... 3	O	Not used output stages, do not connect to any other driver, V_{SS} or V_{DD} ; Pins can be left open
32, 33, 34, 35	TESTIO...3	I	Input stages (internal pull-down) ; Pins can be left open

S : supply, I : input, O : output, TTL : digital (TTL)

5-5. DDP 3310B (Display and Deflection Processor)

(1) Description

The DDP 3310B is a single-chip digital Display and Deflection Processor designed for high-quality backend applications in 100/120MHz TV sets with 4:3- or 16:9 picture tubes. The IC can be combined with members of the DIGIT 3000 IC family (VPC 32xx, TPU 3040), or it can be used with third-party products. The IC contains the entire digital video component and deflection processing and all analog interface components.

(2) Feature

Video processing

- linear horizontal scaling (0.25 ... 4)
- non-linear horizontal scaling " panoramavision"
- dynamic peaking
- soft limiter (gamma correction)
- color transient improvement
- programmable RGB matrix
- picture frame generator
- two analog RGB/Fast-Blank inputs

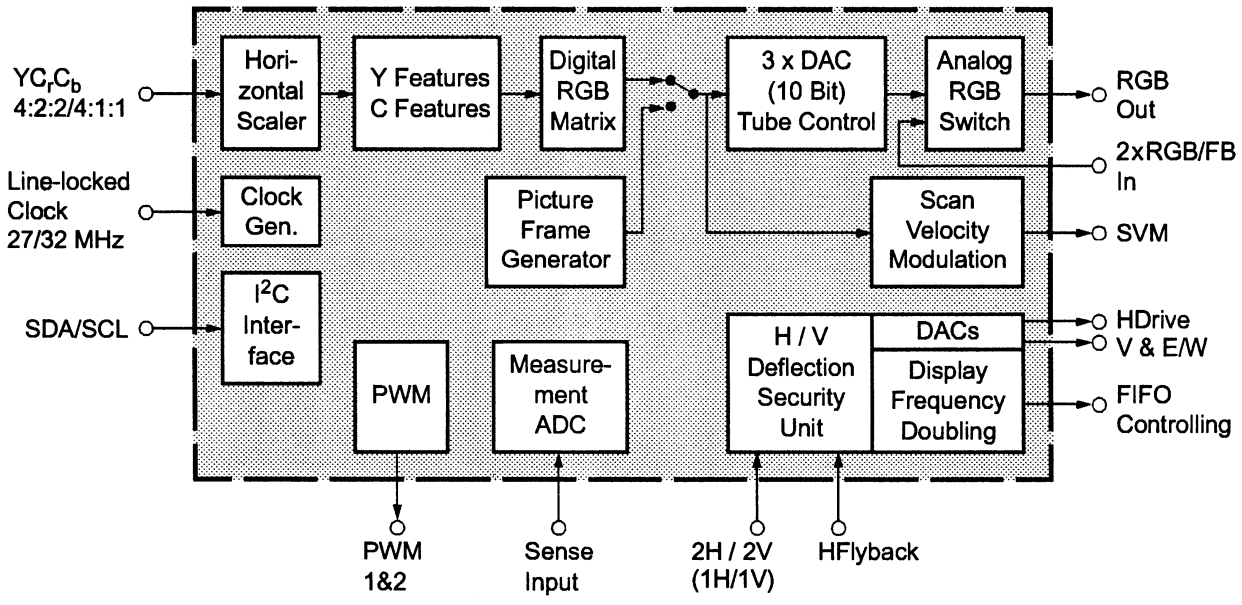
Deflection processing

- scan velocity modulation output
- high-performance H/V deflection
- EHT compensation for vertical / East/West
- soft start/stop of H-Drive
- vertical angle and bow
- differential vertical output
- horizontal and vertical protection circuit
- adjustable horizontal frequency for VGA/SVGA dislay

Miscellaneous

- selectable 4:1:1/4:2:2 YC$_r$C$_b$ input
- selectable 27/32-MHz line-locked clock input
- crystal oscillator for horizontal protection
- automatic picture tube adjustment(cutoff, whitedrive)
- single 5-V power supply
- hardware for simple 50/60-Hz to 100/120-Hz conversion (display frequency doubling)
- two I^{2}C-controlled PWM outputs
- beam current limiter

(3) Block Diagram



(4) Pin Description

Pin 1 - Supply Voltage, Output Pin Driver **VSUPP***
This pin is used as supply for the following digital output pins : FIFORRD, FIFORD, FIFOWR, FIFORWR.

Pin 2 - Ground, Output Pin Driver **GNDP***
Output Pin Driver Reference

Pin 3 - Sync Signal Input **VS2**
Additional pin for the vertical sync information. Via I^2C Register the used vertical sync can be switched between the inputs VS2 and VS(Pin 64)

Pin 4 - Reset for FIFO Read Counter **FIFORRD**
This signal is active-High and resets the read counter in the display frequency doubling FIFO.

Pin 5 - Read Enable for FIFO **FIFORD**
This signal is active-High and enabels the read counter in the display frequency doubling FIFO.

Pin 6 - Write Enable for FIFO **FIFOWR**
This signal is active-High and enables the write counter in the display frequency doubling FIFO.

Pin 7 - Reset for FIFO Write Counter **FIFOWR**
This signal is active-High and enables the write counter in the display frequency doubling FIFO.

Pin 8 - Horizontal Drive **HOUT**
This open-drain output supplies the drive pulse for the horizontal output stage. A pull-up resistor has to be used.

Pin 9 - Horizontal Flyback Input **HFLB**
Via this pin, the horizontal flyback pulse is supplied to the DDP 3310B.

Pin 10 - Safety Input **SAFETY**
This input has two thresholds. A signal between the lower and upper threshold means normal function. Other signals are detected as malfunction.

Pin 11 - Vertical Protection Input **VPROT**
The vertical protection circuitry prevents the picture tube from burn-in in the event of a malfunction of the vertical deflection stage. If the peak-to-peak value of the vertical sawtooth signal is too small, the RGB output signals are blanked.

Pin 12 - H-Drive Frequency Range Select **FREQSEL**
This pin selects the frequency range for the horizontal drive signal.

Pin 13 - Clock Select 40.5 or 27/32 MHz **CM1**
Low level selects 27/32 MHz, High level selects 40.5 MHz

Pin 14 - Clock Select 40.5 or 27/32 MHz **CM0**
Low level selects 27 MHz, High level selects 32 MHz

Pin 15 - Range Switch2 for Measuring ADC **RSW2**
This pin is an open-drain pull-down output. During cutoff measurement the switch is off. During white drive measurement the switch is on. Also during the rest of time it is on.

Pin 16 - Range Switch 1 or Second Input for Measuring ADC **RSW1**
This pin is an open-drain pull-down output. During cutoff and white-drive measurement, the switch is off. During the rest of time it is on. The RSW1 pin can be used as second measurement ADC input.

Pin 17 - Measurement ADC Input **SENSE**
This is the input of the analog to digital converter for the picture and tube measurement. Three measurement ranges are selectable with RSW1 and RSW2

Pin 18 - Measurement ADC Reference Input **MGND**
This is the ground reference for the measurement A/D converter.

Pin 19 - Vertical Sawtooth Output **VERT+(19)**
This pin supplies the drive signal for the vertical output stage. The drive signal is generated with 15-bit precision. The analog voltage is generated by a 4-bit current DAC with external resistor (6 kΩ for proper operation) and uses digital noise-shaping.

Pin 20 - Vertical Sawtooth Output inverted **VERT-**
This pin supplies the inverted signal of VERT+.

Together with this pin, it can be used to drive symmetrical deflection amplifiers.

Pin 21 - East/West Parabola Output **EW**
This pin supplies the parabola signal for the East/West correction. The drive signal is generated with 15-bit precision. The analog voltage is generated by a 4-bit current DAC with external resistor and uses digital noise-shaping.

Pin 22 - DAC Current Reference **XREF**
External reference resistor for DAC output currents, typical 10 kΩ , to adjust the output current of the D/A converters. (see recommended operation conditions).
This resistor has to be connected to analog fround as closely as possible to the pin.

Pin 23 - Scan Velocity Modulation Output **SVM**
This output delivers the analog SVM signal. The D/A converters. At zero signal the output current is 50% of the maximum output current.

Pin 24,25,26 - Analog RGB Output **ROUT, GOUT, BOUT**
These pins are the analog Red/Green/Blue outputs of the back-end. The outputs are current sinks.

Pin 27 - Ground, Analog Back-end **GNDO***
This pin has to be connected to the analog supply voltage. No supply current for the digital stages should flow through this line.

Pin 28 - Supply Voltage, Analog Back-end **VSUPO***
This pin has to be connected to the analog supply voltage. No supply current for the digital stages should flow through this line.

Pin 29 - DAC Reference Decouplign/Beam Current Safety **VRD/BCS**
Via this pin, the DAC reference voltage is decoupled by an external capacitor. The DAC output currents depend on this voltage, therefore a pull-down transistor can be used to shut off all beam currents. A decoupling capacitor of 4.7uF in parallel to 100uF (low inductance) is required.

Pin 30, 34 - Fast-Blank Input **FBLIN1/2**
These pins are used to switch the RGB outputs to the external analog RGB inputs. FBLIN1 switches the RIN1, GIN1 and BIN1 inputs, FBLIN2 switches the RIN2, GIN2 and BIN2 inputs. The active level (Low or High) can be selected by software.

Pin 31, 32, 33 - Analog RGB Input1 **RIN1, GIN1, BIN1**
These pin are used to insert an external analog RGB signal, e.g. from a SCART connector which can by switched to the analog RGB outputs with the Fast-Blank signal. The analog back-end provides separate brightness and contrast settings for the external analog RGB signals.

Pin 35, 36, 37 - Analog RGB Input2 **RIN2, GIN2, BIN2**
These pins are used to insert an external analog RGB signal, e.g. from a SCART connector which can by switched to the analog RGB outputs with the Fast-Blank signal. The analog back-end provides separate brightness and contrast settings for the external analog RGB signals.

Pin 38 - Test Input **TEST**
This pin enables factory test modes. For normal operation it must be connected to ground.

Pin 39 - Reset Input **RESQ**
A low level on this pin resets the DDP 3310B.

Pin 40 - Adjustable DC Output 1 **PWM1**
This output delivers a DC voltage with a resolution of 8 bit, adjustable over the I^2Cbus. The output is driven by a push-pull stage. The PWM frequency is appr 79.4MHz. For a ripple-free voltage a first order lowpass filter with a corner frequency 120 Hz should be applied.

Pin 41 - Adjustable DC Output 2 **PWM2**
See pin 40.

Pin 42 - Half-Contrast Input **HCS**
Via this input pin the output level of the D/A-converted internal RGB signals can be reduced by 6dB. Inserted external analog RGB signals remain unchanged.

Pin 43...50 - Picture Bus Chroma **C0...C7**
The Picture Bus Chroma lines carry the multiplexed color component data. For the 4:1:1 input signal (4-bit chroma) the pins C4...C7 are used.

Pin 51 - Supply Voltage, Digital Circuitry **VSUPD***

Pin 52 - Ground, Digital Circuitry **GNDD***
Digital Circuitry Input Reference

Pin 53 - Main Clock Input **LLC2(53)**
This is the input for the line-locked clock signal. The frequency can be 27, 32, or 40.5 MHz.

Pin 54...61 - Picture Bus Luma **Y0...Y7**
The Picture Bus Luma lines carry the digital luminance data.

Pin 62 - Line-Locked Clock Input **LLC1**
This is the reference clock for the single frequency input sync signals required in a FIFO application. The frequency can be 13.5, 16, or 20.25 MHz.

Pin 63 - Sync Signal Input **HS**
This pin gets the horizontal sync information. Either single or double horizontal frequency or VGA horizontal sync signal.

Pin 64 - Sync Signal Input **VS**
This pin gets the vertical sync informatoion. Either single or double vertical frequency or VGA vertical sync signal.

Pin 65, 66 - Crystal Output / Input **XTAL2 / XTAL1**
These pins are connectecd to an 5-MHz crystal oscillator. The security unit for the HOUT signal uses this clock signal as reference.

Pin 67 - I^2C Data Input/Output **SDA**
Via this pin the I^2C - bus data are written to or read from the DDP 3310B.

Pin 68 - I^2C Clock Input **SCL**
Via this pin, the clock signal for the I^2C bus will be supplied. The signal can be pulled down by an internal transistor.

*** Application Note :**
All ground pins should be connected separeately with short and low-resistive lines to a central power supply ground. Accordingly, all supply pins should be connected separately with short and low-resistive lines to the power supply. Decoupling capacitors from VSUPP to GNDP, VSUPD to GNDD, and VSUPO to GNDO are recommended to be placed as closely as possible to the pins.

5-6. DPL 3519A (Dolby Pro Logic Processor)

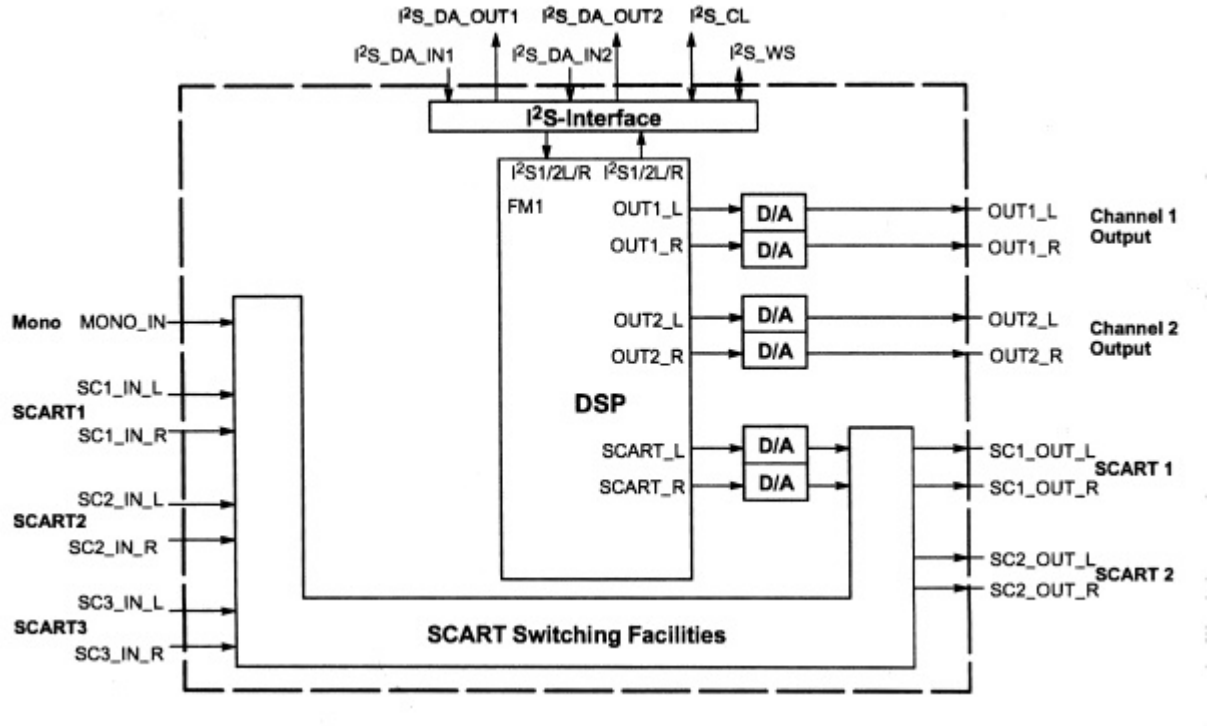
(1) General Description

The DPL 3519A is designed as a coprocessor to the MSP family but has analog output channels in addition to the features of the DPL 3518A. Together with the MSP, a TV set with up to six outputs (L, R, C, SUB, S_L, S_R)can be developed together with headphones and several line outputs.

(2) Features

- Full Dolby Surround Pro Logic Adative Matrix
- Pseudo-surround mode for signals not encoded in dolby Surround
- PANORAMA sound mode(3-D Surround sound via 2 loudspeakers)
- Noise sequencer
- Automatic input balance control
- 7 kHz low-pass filter
- 100 Hz low-pass filter for subwoofer
- Modified Dolby B-type NR decoder
- 30 ms surround delay according to table created by Dolby Labortories (1 ms steps)
- 2 I^2S input channels (e.g. MSP and DRPA)
- 2 I^2S output channels, freely programmable with sound channels L/R (resp. L+C/R+C), C/S, Sub or I^2S input
- Mode control : normal/phantom/wide/three channel/center off/panorama sound/stereo bypass
- Surround matrix mode control : adaptive/passive/effect
- Additional surround basswidth effect
- Reverberation of surround signals
- 2 digital input/output pins
- 1 digital input pin
- Master volume control in dB units
- Level Trim for L, C, R, S in dB units, ±12dB
- Identical treble/bass/loudness function for L, C, R, S
- 5-band equalizer for C channel
- Separate volume control for two surround outputs
- Additional line output for HIFI receiver connection (SCART output). Volume for this output is in dB units.
- 3 pairs of D/A converters
- Scart switches

(3) Block Diagram



(4) Pin Description

Pin No.	PIN Name	Type	Description
1	D_CTR_IN	IN	Digital control input
2	AUD_CL_OUT	OUT	Audio clock output
3	D_CTR_IO1	IN/OUT	Digital control IO1
4	D_CTR_IO1	IN/OUT	Digital control IO 0
5	ADR_SEL	IN	I^2C-Bus address select
6	STANDBYQ	IN	Standby (low-active)
7	I2C_CL	IN	I^2C clock
8	I2C_DA	IN/OUT	I^2C data
9	I2C_CL	OUT	I^2C clock
10	I2C_WS	OUT	I^2C wordstrobe
11	I2C_DA_OUT1	OUT	I^2C data output
12	I2C_DA_IN1	IN	I^2C data input
13	NC		Not connected
14	NC		Not connected
15	NC		Not connected
16	DVSUP		Digital power supply +5V
17	DVSS		Digital ground
18	I2S_DA_IN2	IN	I^2S^2 - data input

Pin No.	PIN Name	Type	Description
19	I2S_DA_OUT	OUT	I^2S^2 - data output
20	RESETQ	IN	Power-on-reset
21	20/19:DACC2_R 18:NC	OUT	Analog output Channel2, right
22	20/19:DACC2_R 18:NC	OUT	Analog output Channel2, left
23	20/19:VREF2 18:NC		Reference ground2 high voltage part
24	20/19:DACC1_R 18:NC	OUT	Analog output Channel1, right
25	20/19:DACC1_L 18:NC	OUT	Analog output Channel1, left
26	NC		Not connected
27	20/19:SC2_OUT_R 18:NC	OUT	Scart output2, right
28	20/19:SC2_OUT_L 18:NC	OUT	Scart output2, left
29	20/19:VREF1 18:NC		Reference ground1 high voltage part
30	20/19:SC1_OUT-R 18:NC	OUT	Scart output1, right
31	20/19:SC1_OUT-L 18:NC	OUT	Scart output1, left
32	20/19:CAPL_C2 18:NC		Volume capacitor Channel2
33	20/19:AHVSUP 18:NC		Analog power supply +8V
34	20/19:CAPL_C1 18:NC		Volume capacitor Channel1
35	20/19:AHVSS 18:NC		Analog ground
36	20/19:AGNDC 18:NC		Analog reference voltage high voltage part
37	20/19:SC3_IN_L 18:NC	IN	Scart input3 in, left
38	20/19:SC3_IN_R 18:NC	IN	Scart input3 in, right
39	20/19:SC2_IN_L 18:NC	IN	Scart input2 in, left
40	20/19:SC2_IN_R 18:NC	IN	Scart input2 in, right
41	20/19:SC1_IN_L 18:NC	IN	Scart input1 in, left
42	20/19:SC1_IN_R 18:NC	IN	Scart input1 in, right
43	VREFTOP		Reference voltage
44	20/19:MONO_IN 18:NC	IN	Mono input
45	AVSS		Analog ground
46	AVSUP		Analog power supply +5V
47	NC		Not connected
48	NC		Not connected
49	NC		Not connected
50	TESTEN	IN	Test pin
51	XTAL_IN	IN	Crystal oscillator
52	XTAL_OUT	OUT	Crystal oscillator

6. IC DC Voltage Charts

*** Input signal** · · · · · · · PAL/CH5 - Video : 8 step colour bar (87% AM)
Audio : 1KHz sinewave (60% FM)

*** User's control condition** · · · · · · · Contrast, Brightness, Colour, Volume Controls-max.

*** Line voltage** · · · · · · · AC 230V, 50Hz

*** All the voltage in each point are measured with Multimeter.**

1. TDA 8172 (I301)

Pin No.	1	2	3	4	5	6	7
V(DC)	0.4	+10.7	-8.7	-10.6	0	11.1	0.4

2. MSP 3415D (I606)

Pin No.	1	2	3	4	5	6	7	8	9	10
V(DC)	2.5	0	0	0	0	0	5.0	0	5.0	5.0

Pin No.	11	12	13	14	15	16	17	18	19	20
V(DC)	2.4	2.4	2.4	0.5	0.6	0.6	0.5	4.9	0	1.3

Pin No.	21	22	23	24	25	26	27	28	29	30
V(DC)	0.4	0.4	0.3	4.9	0.7	0.7	0	0.08	0.08	0

Pin No.	31	32	33	34	35	36	37	38	39	40
V(DC)	0.08	1.0	3.8	3.8	0	3.8	3.8	7.2	8.0	7.2

Pin No.	41	42	43	44	45	46	47	48	49	50
V(DC)	0	3.7	0	0	0	3.7	3.7	0	3.7	3.7

Pin No.	51	52	53	54	55	56	57	58	59	60
V(DC)	0	3.7	3.7	2.6	1.1	0	4.9	1.5	1.5	0

Pin No.	61	62	63	64
V(DC)	0	2.4	2.4	0.5

3. TDA 4470-M (I101)

Pin No.	1	2	3	4	5	6	7	8	9	10
V(DC)	3.2	3.2	3.5	0	1.1	2.4	2.4	2.0	0	1.2

Pin No.	11	12	13	14	15	16	17	18	19	20
V(DC)	1.7	2.1	4.4	3.9	2.6	0	4.2	2.2	3.5	3.3

Pin No.	21	22	23	24	25	26	27	28
V(DC)	3.3	2.3	4.8	2.1	2.0	0.7	0.1	0.1

4. TDA 7269 (I601)

Pin No.	1	2	3	4	5	6	7	8	9	10	11
V(DC)	-14.2	0	+14.2	0	0	-14.2	0	0	5.0	5.0	0

5. ST92195 (I701)

Pin No.	1	2	3	4	5	6	7	8	9	10
V(DC)	3.1	4.8	0	0	0	0	0	0	0	0.5

Pin No.	11	12	13	14	15	16	17	18	19	20
V(DC)	5.0	0	0	0	0.4	0.4	0.4	0	5.0	5.0

Pin No.	21	22	23	24	25	26	27	28	29	30
V(DC)	5	0.7	0	0	5.0	0	1.8	0.6	2.1	0.8

Pin No.	31	32	33	34	35	36	37	38	39	40
V(DC)	5.0	5.0	0.8	1.6	0	0	0	2.0	5.0	0.6

Pin No.	41	42	43	44	45	46	47	48	49	50
V(DC)	0	0	0	0.1	5.0	0	0	0	0	2.3

Pin No.	51	52	53	54	55	56
V(DC)	2.3	5.0	5.0	0.6	2.3	0

6. AT24C16-10PC (I702)

Pin No.	1	2	3	4	5	6	7	8
V(DC)	0	0	5.0	0	5.0	5.0	0	5.0

7. STR-F6654 (I801)

Pin No.	1	2	3	4	5
V(DC)	2.0	0	254.0	18.0	0

8. DPL 3519A

Pin No.	1	2	3	4	5	6	7	8	9	10
V(DC)	0.5	2.7	0.5	0.5	3.8	4.9	5.0	5.0	2.4	2.4

Pin No.	11	12	13	14	15	16	17	18	19	20
V(DC)	0.5	2.4	0.5	0.5	0.5	4.9	0	0.4	0	3.7

Pin No.	21	22	23	24	25	26	27	28	29	30
V(DC)	0.1	0.1	0	0.1	0.1	0	3.7	3.7	0	3.7

Pin No.	31	32	33	34	35	36	37	38	39	40
V(DC)	3.7	6.8	7.8	6.8	0	3.7	3.7	3.7	3.7	3.7

Pin No.	41	42	43	44	45	46	47	48	49	50
V(DC)	3.7	3.7	2.6	3.7	0	5.0	1.5	1.5	0.4	0

Pin No.	51	52
V(DC)	2.2	2.1

9. TEA5101B (I901)

Pin No.	1	2	3	4	5	6	7	8	9	10
V(DC)	3.2	12.2	3.2	3.2	210.0	0.6	172.0	0	115.0	177.0

Pin No.	11	12	13	14	15
V(DC)	0.6	119.0	168.0	0.6	116.0

10. P503

Pin No.	1	2	3	4	5	6	7	8	9	10
V(DC)	0	5.0	1.0	1.0	0	1.9	0	0	0	0.6

Pin No.	11	12	13	14	15	16	17	18
V(DC)	-0.3	0	4.9	0.6	0.4	0.4	0.4	12.1

11. P504

Pin No.	1	2	3	4	5	6	7	8	9	10
V(DC)	0.9	0	0	0.8	0	0	1.2	0	0	0

Pin No.	11	12	13	14	15	16	17	18
V(DC)	5	5	70	0.6	0	3	3	3

7. Service Parts List/Recommendable Spare Parts List

Caution ® is recommendable spare part.

⚠ is safety component, so it must be used the same component.

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
ZZ100	48B3822D05	TRANSMITTER REMOCON	R-22D05	®
ZZ110	PTACPWD228	ACCESSORY AS	DTJ-28G6F	
10	4850Q00910	BATTERY	R03/NN	
20	4859102620	JACK ANT	3104.308.73221	
M821	4858213800	BAG INSTRUCTION	L.D.P.E T0.05X250X400	
ZZ120	PTBCSHD310	COVER BACK AS	DTJ-28A6F	
M211	4852156501	COVER BACK	HIPS BK	
M211D	4857817611	CLOTH BLACK	FELT 200X20X0.7	
M541	4855415800	SPEC PLATE	150ART P/E FILM (C/TV)	
ZZ130	PTPKCPD310	PACKING AS	DTJ-28A6F	
M641	6520010100	STAPLE PIN	18M/M J D O	
M681	4856812400	BAND	18MM X 3M	
M801	4858054600	BOX CARTON	SW-2	
M811	4858193801	PAD	EPS 28A6	
M822	4858215600	BAG P.E	PE FOAM T0.5X1600X1270	
ZZ131	58G0000103	COIL DEGAUSSING	DC-2701	
ZZ132	48519A5510	CRT GROUND NET	2801H-1015-2P	
ZZ140	PTCACAD310	CABINET AS	DTJ-28A6F	
M201A	4857818701	CLOTH BLACK	FELT T0.7 L 250 W 15	
M201B	4857818702	CLOTH BLACK	FELT T0.7 L 350 W 15	
M211A	7172401612	SCREW TAPPTITE	TT2 TRS 4X16 MFZN BK	
M211B	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
M281	4852822401	DOOR	PC CL	
M352	97P4602700	CLAMP CORD	NYLON 66 BLK 5280N	
M391A	7172401612	SCREW TAPPTITE	TT2 TRS 4X16 MFZN BK	
M481	4854856801	BUTTON POWER	HIPS BK	
M481A	4856716000	SPRING	SWPA PIE0.5	
M491A	7178301011	SCREW TAPPTITE	TT2 WAS 3X10 MFZN	
M501	4855059601	DECO CTRL	PVC T0.25	
M561	4855617401	MARK BRAND	AL (SILVER)	
M681	4856812001	TIE CABLE	NYLON66 DA100	
M682	4856816300	CLAMP WIRE	NYLON 6 (V0)	
M791	4857923300	DOOR LOCK	LA701(KIFCO)	
P405	4850704N07	CONNECTOR	SE100J+172792+USW 500	
SP01A	7172401212	SCREW TAPPTITE	TT2 TRS 4X12 MFZNCK	
SP02A	7172401212	SCREW TAPPTITE	TT2 TRS 4X12 MFZNCK	
V901	4859625760	CRT	A66EAK071X54	®
V901A	4856215402	WASHER RUBBER	CR T2.0	
V901B	4856015820	SCREW CRT FIX	SWRM+SK5 L 35	
ZZ200	PTFMSJD310	MASK FRONT AS	DTJ-28A6F	®
M201	4852074501	MASK FRONT	HIPS BK	
M251	4852540601	GRILL L	PS SHEET	
M252	4852538401	GRILL R	PS SHEET	
ZZ220	PTSPPWD228	SPEAKER AS	DTJ-28G6F	®

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
P601A	4850704S30	CONNECTOR	YH025-04+35098+ULW 700	
SP01	4858311110	SPEAKER	12W 8 OHM SP-58126F	
SP02	4858311110	SPEAKER	12W 8 OHM SP-58126F	
ZZ290	PTMPMSD228	PCB MAIN MANUAL AS	DTJ-28G6F	®
1	DFMLG12S--	DIODE	FML-G12S	
0000A	4857026900	HEAT SINK	AL EX	
0000B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN	
C100	CXRH1H150J	C CERA	RH 50V 15PF J (TAPPING)	
C101	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C102	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C103	CEXF1E330V	C ELECTRO	25V RSS 33MF (5X11) TP	
C104	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
C107	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C109	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C117	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
C303	CMXM2A683J	C MYLAR	100V 0.068MF J (TP)	
C305	CEXF1V101C	C ELECTRO	35V RUS 100MF (8X11.5) TP	
C401	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C402	CMYH3C432J	C MYLAR	1.6KV BUP 4300PF J	
C403	CEXF1C102C	C ELECTRO	16V RUS 1000MF (10X20) TP	
C404	CMYH3C622J	C MYLAR	1.6KV BUP 6200PF J	
C405	CMYE2J223J	C MYLAR	630V PU 0.022MF J	
C406	CEXF1E471C	C ELECTRO	25V RUS 470MF (10X16) TP	
C407	CEXF1H100C	C ELECTRO	50V RUS 10MF (5X11) TP	
C408	CMYE2G334J	C MYLAR	400V PU 0.33MF J	
C409	CMXB1H273J	C MYLAR	50V EU 0.027MF J (TP)	
C411	CEXF2C109V	C ELECTRO	160V RSS 1MF (6.3X11) TP	
C412	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C413	CEXF1C102V	C ELECTRO	16V RSS 1000MF (10X20) TP	
C415	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
C416	CCXB3D471K	C CERA	2KV B 470PF K (TAPPING)	
C417	CMXM2A222J	C MYLAR	100V 2200PF J (TP)	
C418	CEYD1H689W	C ELECTRO	50V RHD 6.8MF (16X35.5)	
C420	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C501	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C601	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C602	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C603	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C605	CEXF1E471C	C ELECTRO	25V RUS 470MF (10X16) TP	
C606	CEXF1E471C	C ELECTRO	25V RUS 470MF (10X16) TP	
C619	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C620	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C625	CEXF1H479C	C ELECTRO	50V RUS 4.7MF (5X11) TP	
C626	CEXF1H479C	C ELECTRO	50V RUS 4.7MF (5X11) TP	
C627	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C628	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C655	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C656	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C658	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C674	CEXF1H479C	C ELECTRO	50V RUS 4.7MF (5X11) TP	
C675	CEXF1H479C	C ELECTRO	50V RUS 4.7MF (5X11) TP	
C701	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C702	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C703	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C705	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C731	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C801	CL1JB3474K	C LINE ACROSS	AC250V 0.47MF U/C/SNDF/ SV	⚠
C802	CL1JB3474K	C LINE ACROSS	AC250V 0.47MF U/C/SNDF/ SV	⚠
C805	CCXF3A472Z	C CERA	1KV F 4700PF Z (T)	
C806	CCXF3A472Z	C CERA	1KV F 4700PF Z (T)	
C808	CCZB1H681K	C CERA	50V B 680PF K (AXIAL)	
C809	CEYA2G221G	C ELECTRO	400V LSS 220MF (30X40)	
C810	CBYB3D152K	C CERA SEMI	2KV BL(N) 1500PF K	
C812	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
C813	CCXB3A471K	C CERA	1KV B 470PF K (T)	
C814	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C815	CEYF2D101V	C ELECTRO	200V RSS 100MF (16X31.5)	
C816	CEYF2D101V	C ELECTRO	200V RSS 100MF (16X31.5)	
C817	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	
C818	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C819	CEXF2A100V	C ELECTRO	100V RSS 10MF (6.3X11) TP	
C820	CEXF1C332V	C ELECTRO	16V RSS 3300MF (16X25) TP	
C821	CCXB3D681K	C CERA	2KV B 680PF K (TAPPING)	
C822	CH1AFE472M	C CERA AC	4KV 4700PF M KX DE1610	
C823	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C826	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C827	CEXF1E471C	C ELECTRO	25V RUS 470MF (10X16) TP	
C830	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C831	CEXF1E222V	C ELECTRO	25V RSS 2200MF (16X25) TP	
C832	CEXF1E222V	C ELECTRO	25V RSS 2200MF (16X25) TP	
C836	CEXF1E471C	C ELECTRO	25V RUS 470MF (10X16) TP	
C837	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C840	CXSL2H470J	C CERA	500V SL 47PF J (TAPPING)	
C841	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C842	CEXF1E471C	C ELECTRO	25V RUS 470MF (10X16) TP	
C843	CEXF1E471C	C ELECTRO	25V RUS 470MF (10X16) TP	
C910	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
C911	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
C912	CCXB3D102K	C CERA	2KV B 1000PF K (TAPPING)	
C913	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CC101	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC102	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC103	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC104	HCQK220JCA	C CHIP CERA	50V CH 22PF J 2012	
CC105	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CC106	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC107	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC108	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC109	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC110	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC112	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC114	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC115	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC116	HCTAF229MB	C CHIP TANTAL	16V 2.2MF M 3216	
CC118	HCFK474ZCA	C CHIP CERA	Y5V 50V 0.47MF Z 2012	
CC120	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC302	HCBK223KCA	C CHIP CERA	50V X7R 0.022MF K 2012	
CC303	HCBK223KCA	C CHIP CERA	50V X7R 0.022MF K 2012	
CC306	HCBK333KCA	C CHIP CERA	50V X7R 0.033MF K 2012	
CC401	HCBK223KCA	C CHIP CERA	50V X7R 0.022MF K 2012	
CC601	HCQK470JCA	C CHIP CERA	50V CH 47PF J 2012	
CC603	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
CC604	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC609	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC610	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC611	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CC612	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC614	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC617	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CC618	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CC619	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC620	HCBK223KCA	C CHIP CERA	50V X7R 0.022MF K 2012	
CC621	HCQK509DCA	C CHIP CERA	50V CH 5PF D 2012	
CC622	HCQK509DCA	C CHIP CERA	50V CH 5PF D 2012	
CC623	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC624	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC628	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CC629	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC630	HCTAF339MB	C CHIP TANTAL	16V 3.3MF M 3216	
CC631	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CC632	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CC633	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CC634	HCBK472KCA	C CHIP CERA	50V X7R 4700PF K 2012	
CC635	HCBK472KCA	C CHIP CERA	50V X7R 4700PF K 2012	
CC636	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC637	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC638	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CC639	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CC640	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC641	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC644	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC645	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC646	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC653	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC654	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC656	HCQK471JCA	C CHIP CERA	50V CH 470PF J 2012	
CC660	HCBK333KCA	C CHIP CERA	50V X7R 0.033MF K 2012	
CC662	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CC663	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC665	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CC666	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CC669	HCTAH109MB	C CHIP TANTAL	25V 1MF M 3216	
CC670	HCTAH109MB	C CHIP TANTAL	25V 1MF M 3216	
CC671	HCTAF339MB	C CHIP TANTAL	16V 3.3MF M 3216	
CC672	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CC673	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CC676	HCTAD479MB	C CHIP TANTAL	10V 4.7MF M 3216	
CC677	HCTAD479MB	C CHIP TANTAL	10V 4.7MF M 3216	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
CC701	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC702	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC704	HCBK472KCA	C CHIP CERA	50V X7R 4700PF K 2012	
CC705	HCBK222KCA	C CHIP CERA	50V X7R 2200PF K 2012	
CC706	HCQK220JCA	C CHIP CERA	50V CH 22PF J 2012	
CC707	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC708	HCFK474ZCA	C CHIP CERA	Y5V 50V 0.47MF Z 2012	
CC709	HCQK820JCA	C CHIP CERA	50V CH 82PF J 2012	
CC710	HCBK222KCA	C CHIP CERA	50V X7R 2200PF K 2012	
CC711	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC713	HCQK820JCA	C CHIP CERA	50V CH 82PF J 2012	
CC715	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CC716	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC717	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC719	HCQK220JCA	C CHIP CERA	50V CH 22PF J 2012	
CC720	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CC721	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC801	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC802	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC803	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC804	HCBK152KCA	C CHIP CERA	50V X7R 1500PF K 2012	
CC834	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CC904	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC905	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC906	HCBK102KCA	C CHIP CERA	50V X7R 1000PF K 2012	
CC907	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CCA10	HCBK331KCA	C CHIP CERA	50V X7R 330PF K 2012	
CCA20	HCBK331KCA	C CHIP CERA	50V X7R 330PF K 2012	
D101	D1N4148---	DIODE	1N4148 (TAPPING)	
D102	D1SS85TA--	DIODE	1SS85TA	
D301	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D302	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
D404	DDMV32F5--	DIODE	DMV32F5	
D404A	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
D405	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D407	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D408	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D410	D1N4937G--	DIODE	1N4937G	
D411	D1N4148---	DIODE	1N4148 (TAPPING)	
D412	D1N4148---	DIODE	1N4148 (TAPPING)	
D413	D1N4148---	DIODE	1N4148 (TAPPING)	
D414	D1N4148---	DIODE	1N4148 (TAPPING)	
D415	D1N4937G--	DIODE	1N4937G	
D501	DUZ8R2BM--	DIODE ZENER	UZ-8.2B (8.2V)	
D502	DUZ8R2BM--	DIODE ZENER	UZ-8.2B (8.2V)	
D503	DUZ8R2BM--	DIODE ZENER	UZ-8.2B (8.2V)	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
D701	D1N4148---	DIODE	1N4148 (TAPPING)	
D703	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
D705	D1N4148---	DIODE	1N4148 (TAPPING)	
D706	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
D707	DSR54MVW3-	LED	SPR54 MVW RED/GREEN	
D707A	4853533600	HOLDER LED	P.P BK	
D708	D1N4148---	DIODE	1N4148 (TAPPING)	
D801	DLT2A05G--	DIODE	LT2A05G (TP)	
D802	DLT2A05G--	DIODE	LT2A05G (TP)	
D803	DLT2A05G--	DIODE	LT2A05G (TP)	
D804	DLT2A05G--	DIODE	LT2A05G (TP)	
D805	DEU1Z-----	DIODE	EU1Z (HIGH SPEED)	
D806	DEU1Z-----	DIODE	EU1Z (HIGH SPEED)	
D807	DEU1Z-----	DIODE	EU1Z (HIGH SPEED)	
D808	D1N4937G--	DIODE	1N4937G	
D809	DRGP30J---	DIODE	RGP30J	
D810	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D811	DUZ7R5BM--	DIODE ZENER	UZ-7.5BM 7.5V	
D812	PTP2SW6900	HEAT SINK ASS`Y	DFMLG12S-- + 7174301011	
D813	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D814	PTP2SW6900	HEAT SINK ASS`Y	DFMLG12S-- + 7174301011	
D815	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
D816	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D817	D1N4148---	DIODE	1N4148 (TAPPING)	
D818	DEU1Z-----	DIODE	EU1Z (HIGH SPEED)	
D819	DEU1Z-----	DIODE	EU1Z (HIGH SPEED)	
D820	PTP2SW6900	HEAT SINK ASS`Y	DFMLG12S-- + 7174301011	
D822	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D824	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D825	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
D904	DLT2A05G--	DIODE	LT2A05G (TP)	
D905	D1N4936GP-	DIODE	1N4936GP (TAPPING)	
DA01	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA02	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
DA03	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA04	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA05	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA07	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA11	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA12	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
DA13	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
DA15	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA16	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
DA17	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
DA18	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
DA19	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
DA20	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA21	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA22	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA23	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA24	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA25	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA27	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM(TAPPING)	
DA30	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
DA31	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
DA32	DUZ5R1B---	DIODE ZENER	UZ-5.1B UNIZON	
F801	5FSCB4022R	FUSE CERA	SEMKO F4AH 4A 250V MF51	⚠
F801A	4857415001	CLIP FUSE	PFC5000-0702	
F801B	4857415001	CLIP FUSE	PFC5000-0702	
G901	4SG0D00103	SPARK GAP	S-23 900V-1.5KV	
G902	4SG0D00103	SPARK GAP	S-23 900V-1.5KV	
G903	4SG0D00103	SPARK GAP	S-23 900V-1.5KV	
HP01	4859102130	JACK EARPHONE	YSC-1537	
I101	1TDA4470M-	IC IF	TDA4470-M	
I301	PTB2SW8205	HEAT SINK ASS`Y	1TDA8172-- + 7174300811	
I301	1TDA8172--	IC V-OUT	TDA8172	®
I301A	4857028205	HEAT SINK	AL EX BK	
I301B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
I601	PTA2SW7534	HEAT SINK ASS`Y	1TDA7269-- + 7174300811	
I601	1TDA7269--	IC AUDIO	TDA7269	®
I601A	4857027534	HEAT SINK	AL EXBK	
I601B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
I604	1DP3519AA2	IC AUDIO DOLBY	DPL3519A-A2	
I605	1KA4558---	IC AMP	KA4558	
I606	1MSP3410D-	IC AUDIO	MSP3410D	
I701	1ST195EPM-	IC MICOM OTP	ST92T195B1/EPM	®
I702	1AT24C16PC	IC	AT24C16-10PC	
I703	1TS0P1238W	IC PREAMP	TS0P1238WI1	
I704	1K1A7042AP	IC REGULATOR	KIA7042AP	
I801	PTA2SW7910	HEAT SINK ASS`Y	1STRF6654- + 7171300811	
I801	1STRF6654-	IC SMPS	STR-F6654	®
I801A	4857027910	HEAT SINK	AL EX	
I801B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
I802	1LTV817C--	IC PHOTO COUPLER	LTV-817C	® ⚠
I803	1SE140N---	IC AMP	SE140N	
I804	1KA7805---	IC REGULATOR	KA7805	
I805	PTA2SW7710	HEAT SINK ASS`Y	1PR05RF11- + 7174300811	
I805	1PQ05RF11-	IC REGULATOR	PQ05RF11	
I805A	4857027710	HEAT SINK	AL EX	
I805B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
I807	1MC7812---	IC REGULATOR	MC7812 12V 1A (KA7812)	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
I808	1KA7808---	IC REGULATOR	KA7808	
I809	1UPC574J--	IC	UPC574J	
I810	TX0202DA--	THYRISTOR	X0202DA1BA2	
I901	PTB2SW5403	HEAT SINK ASS`Y	1TEA5101B- + 7174300811	
I901	1TEA5101B-	IC VIDEO AMP	TEA5101B	
I901A	4857025403	HEAT SINK	AL050P-H24 T 2	
I901B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
JC100	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC101	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC103	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC107	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC108	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC110	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC120	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC123	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC306	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC606	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC702	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC704	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC705	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC706	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC803	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JC806	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCA02	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCA03	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JPA01	4859200401	SOCKET RGB	YRS21-R1	
JPA02	4859200401	SOCKET RGB	YRS21-R1	
JPA03	4859108450	JACK PIN BOARD	YSC03P-4120-14A	
JPA05	4859100680	JACK AUDIO TERMINAL	SI-T55220P 4P	
L101	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
L103	5.80E+42	COIL AFT	TRF-A005	
L301	5MC0000100	COIL BEAD	HC-3550	
L302	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
L303	5MC0000100	COIL BEAD	HC-3550	
L401	58H0000054	COIL H-LINEARITY	TRL-040F	
L402	5MC0000100	COIL BEAD	HC-3550	
L403	58C0000118	COIL CHOKE	CH-191A	
L404	5MC0000100	COIL BEAD	HC-3550	
L601	5CPZ109M02	COIL PEAKING	1UH M (AXIAL 3.5MM)	
L602	5CPZ109M02	COIL PEAKING	1UH M (AXIAL 3.5MM)	
L605	5CPZ109M02	COIL PEAKING	1UH M (AXIAL 3.5MM)	
L606	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
L607	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
L608	5CPZ109M02	COIL PEAKING	1UH M (AXIAL 3.5MM)	
L609	5MC0000100	COIL BEAD	HC-3550	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
L610	58C0000116	COIL BEAD	HC-3550R	
L620	5CPX100K04	COIL PEAKING	10UH K ELC0607RA	
L621	5CPX100K04	COIL PEAKING	10UH K ELC0607RA	
L625	5CPZ569K02	COIL PEAKING	5.6UH K (AXIAL 3.5MM)	
L626	5CPZ569K02	COIL PEAKING	5.6UH K (AXIAL 3.5MM)	
L801	5MC0000100	COIL BEAD	HC-3550	
L802	58C0000096	COIL CHOKE	610G0233(470K)	
L821	5PLF24A1--	FILTER LINE	LF-24A1	⚠
LA10	5MC0000100	COIL BEAD	HC-3550	
LA20	5MC0000100	COIL BEAD	HC-3550	
P101	485923162S	CONN WAFER	YW025-03 (STICK)	
P102	485923162S	CONN WAFER	YW025-03 (STICK)	
P104	485923162S	CONN WAFER	YW025-03 (STICK)	
P401	485923172S	CONN WAFER	YW025-04 (STICK)	
P401A	4850704S04	CONNECTOR	YH025-04+YST025+ULW 400	
P501	485923202S	CONN WAFER	YW025-07 (STICK)	
P501A	4850707S02	CONNECTOR	YH025-07+YST025+ULW 400	
P503	4859281320	CONN WAFER	TAC-L18X-A1	
P504	4859281320	CONN WAFER	TAC-L18X-A1	
P601	485923172S	CONN WAFER	YW025-04 (STICK)	
P801	4859242220	CONN WAFER	YFW800-02	⚠
P802	4859242220	CONN WAFER	YFW800-02	⚠
P903	4859238620	CONN WAFER	YPW500-02	
PD03A	4850703S29	CONNECTOR	YH025-03+YST025+USW 300	
PWC1	PTWBSW7410	CORD POWER ASS`Y	906111+HOUSING+TUBE+17700	Ⓡ
Q101	TKTC3197--	TR	KTC3197 (TP)	
Q401	PTA3SW1000	HEAT SINK ASS`Y	TBUH1015H1 + 7174300811	
Q401	TBUH1015H1	TR	BUH1015HI	
Q401A	4857031000	HEAT SINK	AL EX	
Q401B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
Q402	TBD709----	TR	BD709	
Q403	PTQ2SW7800	HEAT SINK ASS`Y	TKTD2058Y-+ 7174300811	
Q403	TKTD2058Y-	TR	KTD 2058-Y	
Q403A	4857027800	HEAT SINK	AL EX	
Q403B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
QC101	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC102	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC103	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC104	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC107	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC108	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC401	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
QC402	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC405	T2SA812T2B	TR CHIP	2SA812-T2B	
QC501	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC502	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC601	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC602	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC610	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC611	T2SA812T2B	TR CHIP	2SA812-T2B	
QC612	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC613	T2SA812T2B	TR CHIP	2SA812-T2B	
QC701	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC703	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC704	T2SA812T2B	TR CHIP	2SA812-T2B	
QC801	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC802	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC803	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC804	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC805	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
QC806	T2SA812T2B	TR CHIP	2SA812-T2B	
QC807	T2SA812T2B	TR CHIP	2SA812-T2B	
R101	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R102	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R104	RN-AZ1502F	R METAL FILM	1/6 15K OHM F	
R105	RN-AZ3600F	R METAL FILM	1/6 360.0 OHM F	
R106	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R110	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
R111	RD-AZ183J-	R CARBON FILM	1/6 18K OHM J	
R301	RN-AZ1202F	R METAL FILM	1/6 12K OHM F	
R302	RD-2Z229J-	R CARBON FILM	1/2 2.2 OHM J	
R303	RN-4Z2401F	R METAL FILM	1/4 2.40K OHM F	
R304	RN-AZ2201F	R METAL FILM	1/6 2.2K OHM F	
R305	RD-2Z151J-	R CARBON FILM	1/2 150 OHM J	
R306	RW01Y228F-	R WIRE WOUND	1W 0.22 OHM F	
R307	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R308	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R401	RS02Z220JS	R M-OXIDE FILM	2W 22 0HM J SMALL	
R403	RF01Z689J-	R FUSIBLE	1W 6.8 OHM J (TAPPING)	
R404	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R405	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R406	RF01Z228K-	R FUSIBLE	1W 0.22 OHM K (TAPPING)	
R407	RN-4Z2003F	R METAL FILM	1/4 200K OHM F	
R408	RD-4Z479J-	R CARBON FILM	1/4 4.7 OHM J	
R409	RD-4Z689J-	R CARBON FILM	1/4 6.8 OHM J	
R411	RD-AZ220J-	R CARBON FILM	1/6 22 OHM J	
R415	RS02Z561JS	R M-OXIDE FILM	2W 560 OHM J SMALL	
R416	RF01Z188K-	R FUSIBLE	1W 0.18 OHM K (TAPPING)	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
R417	RF-4Y228K-	R FUSIBLE	1/4 0.22 OHM K	
R418	RF01Z188K-	R FUSIBLE	1W 0.18 OHM K (TAPPING)	
R420	RN02B473JS	R METAL FILM	2W 47K OHM J SMALL	
R502	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R601	RD-4Z479J-	R CARBON FILM	1/4 4.7 OHM J	
R602	RD-4Z479J-	R CARBON FILM	1/4 4.7 OHM J	
R605	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R606	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R607	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R608	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R611	RD-AZ183J-	R CARBON FILM	1/6 18K OHM J	
R624	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R625	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R704	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R705	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R706	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R711	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R712	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R713	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	
R801	DEC140M290	POSISTOR	ECPCC140M290	
R802	RS02Z683JS	R M-OXIDE FILM	2W 68K OHM J SMALL	
R803	RC-2Z225KP	R CARBON COMP	1/2 2.2M OHM K	
R805	RD-2Z100J-	R CARBON FILM	1/2 10 OHM J	
R809	RF01Z158K-	R FUSIBLE	1W 0.15 OHM K (TAPPING)	
R810	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R811	RS01Z102J-	R M-OXIDE FILM	1W 1K OHM J (TAPPING)	
R812	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R813	RD-AZ203J-	R CARBON FILM	1/6 20K OHM J	
R815	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R816	RF02Z228K-	R FUSIBLE	2W 0.22 OHM K (TAPPING)	
R817	RF02Z228K-	R FUSIBLE	2W 0.22 OHM K (TAPPING)	
R818	RC-2Z565KP	R CARBON COMP	1/2 5.6M OHM K	⚠
R819	RX10T339J-	R CEMENT	10W 3.3 OHM J TRIPOD	
R820	RD-2Z222J-	R CARBON FILM	1/2 2.2K OHM J	
R822	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	⚠
R823	RD-4Z153J-	R CARBON FILM	1/4 15K OHM J	
R824	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R825	RS02Z100JS	R M-OXIDE FILM	2W 10 OHM J SMALL	
R826	RS02Z103JS	R M-OXIDE FILM	2W 10K OHM J SMALL	
R827	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R828	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R829	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
R830	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R902	RD-AZ242J-	R CARBON FILM	1/6 2.4K OHM J	
R903	RS01Z683J-	R M-OXIDE FILM	1W 68K OHM J (TAPPING)	
R905	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
R907	RD-AZ242J-	R CARBON FILM	1/6 2.4K OHM J	
R908	RS01Z683J-	R M-OXIDE FILM	1W 68K OHM J (TAPPING)	
R910	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R912	RD-AZ242J-	R CARBON FILM	1/6 2.4K OHM J	
R913	RS01Z683J-	R M-OXIDE FILM	1W 68K OHM J (TAPPING)	
R915	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R920	RD-2Z105J-	R CARBON FILM	1/2 1M OHM J	
R921	RD-2Z102J-	R CARBON FILM	1/2 1K OHM J	
RA02	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA03	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RB02	RV5426103P	R SEMI FIXED	ENV-DJAA03B14 10K OHM B	
RC101	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC102	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC108	HRFT153JCA	R CHIP	1/10 15K OHM J 2012	
RC109	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012	
RC110	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	
RC111	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC112	HRFT562JCA	R CHIP	1/10 5.6K OHM J 2012	
RC113	HRFT563JCA	R CHIP	1/10 56K OHM J 2012	
RC116	HRFT223JCA	R CHIP	1/10 22K OHM J 2012	
RC120	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RC128	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	
RC129	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	
RC130	HRFT151JCA	R CHIP	1/10 150 OHM J 2012	
RC131	HRFT153JCA	R CHIP	1/10 15K OHM J 2012	
RC132	HRFT153JCA	R CHIP	1/10 15K OHM J 2012	
RC133	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RC136	HRFT751JCA	R CHIP	1/10 750 OHM J 2012	
RC137	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC138	HRFT682JCA	R CHIP	1/10 6.8K OHM J 2012	
RC139	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012	
RC140	HRFT470JCA	R CHIP	1/10 47 OHM J 2012	
RC141	HRFT470JCA	R CHIP	1/10 47 OHM J 2012	
RC142	HRFT470JCA	R CHIP	1/10 47 OHM J 2012	
RC303	HRFT752JCA	R CHIP	1/10 7.5K OHM J 2012	
RC304	HRFT912JCA	R CHIP	1/10 9.1K OHM J 2012	
RC305	HRFT682JCA	R CHIP	1/10 6.8K OHM J 2012	
RC306	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	
RC307	HRFT682JCA	R CHIP	1/10 6.8K OHM J 2012	
RC401	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RC402	HRFT202JCA	R CHIP	1/10 2K OHM J 2012	
RC404	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	
RC405	HRFT433JCA	R CHIP	1/10 43K OHM J 2012	
RC406	HRFT751JCA	R CHIP	1/10 750 OHM J 2012	
RC407	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
RC411	HRFT123JCA	R CHIP	1/10 12K OHM J 2012	
RC412	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC413	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC414	HRFT152JCA	R CHIP	1/10 1.5K OHM J 2012	
RC415	HRFT682JCA	R CHIP	1/10 6.8K OHM J 2012	
RC544	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RC546	HRFT202JCA	R CHIP	1/10 2K OHM J 2012	
RC603	HRFT512JCA	R CHIP	1/10 5.1K OHM J 2012	
RC604	HRFT512JCA	R CHIP	1/10 5.1K OHM J 2012	
RC605	HRFT303JCA	R CHIP	1/10 30K OHM J 2012	
RC606	HRFT303JCA	R CHIP	1/10 30K OHM J 2012	
RC607	HRFT272JCA	R CHIP	1/10 2.7K OHM J 2012	
RC608	HRFT332JCA	R CHIP	1/10 3.3K OHM J 2012	
RC618	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC619	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC620	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC621	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC622	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC623	HRFT153JCA	R CHIP	1/10 15K OHM J 2012	
RC624	HRFT561JCA	R CHIP	1/10 560 OHM J 2012	
RC625	HRFT561JCA	R CHIP	1/10 560 OHM J 2012	
RC628	HRFT183JCA	R CHIP	1/10 18K OHM J 2012	
RC701	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RC702	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC703	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC704	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC705	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC706	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC707	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	
RC708	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012	
RC709	HRFT222JCA	R CHIP	1/10 2.2K OHM J 2012	
RC712	HRFT562JCA	R CHIP	1/10 5.6K OHM J 2012	
RC714	HRFT223JCA	R CHIP	1/10 22K OHM J 2012	
RC715	HRFT153JCA	R CHIP	1/10 15K OHM J 2012	
RC716	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC717	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC719	HRFT562JCA	R CHIP	1/10 5.6K OHM J 2012	
RC720	HRFT472JCA	R CHIP	1/10 4.7K OHM J 2012	
RC722	HRFT332JCA	R CHIP	1/10 3.3K OHM J 2012	
RC723	HRFT132JCA	R CHIP	1/10 1.3K OHM J 2012	
RC724	HRFT182JCA	R CHIP	1/10 1.8K OHM J 2012	
RC725	HRFT392JCA	R CHIP	1/10 3.9K OHM J 2012	
RC726	HRFT153JCA	R CHIP	1/10 15K OHM J 2012	
RC727	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC728	HRFT124JCA	R CHIP	1/10 120K OHM J 2012	
RC729	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
RC730	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC731	HRFT161JCA	R CHIP	1/10 160 OHM J 2012	
RC732	HRFT151JCA	R CHIP	1/10 150 OHM J 2012	
RC733	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RC734	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RC735	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC802	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RC804	HRFT100JCA	R CHIP	1/10 10 OHM J 2012	
RC901	HRFT821JCA	R CHIP	1/10 820 OHM J 2012	
RC902	HRFT821JCA	R CHIP	1/10 820 OHM J 2012	
RC903	HRFT821JCA	R CHIP	1/10 820 OHM J 2012	
RC904	HRFT751JCA	R CHIP	1/10 750 OHM J 2012	
RC905	HRFT751JCA	R CHIP	1/10 750 OHM J 2012	
RC906	HRFT751JCA	R CHIP	1/10 750 OHM J 2012	
RC907	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC908	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC909	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RC910	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	
RC911	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	
RC912	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	
RCA01	HRFT750JCA	R CHIP	1/10 75 OHM J 2012	
RCA02	HRFT750JCA	R CHIP	1/10 75 OHM J 2012	
RCA03	HRFT750JCA	R CHIP	1/10 75 OHM J 2012	
RCA04	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCA05	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCA06	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCA07	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RCA10	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RCA11	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RCA12	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RCA13	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RCA14	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RCA15	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RCA16	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RCA17	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RCA26	HRFT473JCA	R CHIP	1/10 47K OHM J 2012	
RCA27	HRFT473JCA	R CHIP	1/10 47K OHM J 2012	
RCA29	HRFT124JCA	R CHIP	1/10 120K OHM J 2012	
SCT1	4859302930	SOCKET CRT	ISHS-09S	
SF01	5PG3962M--	FILTER SAW	G 3962-M	
SF02	5PK9650M--	FILTER SAW	K9650M	
SW601	5S30202033	SW SLIDE	KSA-2273S	
SW700	5S50101090	SW TACT	SKHV17910A	
SW701	5S50101090	SW TACT	SKHV17910A	
SW702	5S50101090	SW TACT	SKHV17910A	
SW703	5S50101090	SW TACT	SKHV17910A	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
SW704	5S50101090	SW TACT	SKHV17910A	
SW801	5S40101143	SW POWER PUSH	PS3-22SP (P.C.B)	® ⚠
T401	50D25A1---	TRANS DRIVE	TD-25A1	
T402	50H0000200	FBT	1372.0036	® ⚠
T801	50M4936A9-	TRANS SMPS	TSM-4936A9	
TU01	4859719430	TUNER VARACTOR	EL2782/105-B	®
W101	4851900130	GROUND TUNER AS	DS-W1015-S	
X601	5XE18R432E	CRYSTAL QUARTZ	HC-49/U 18.43200MHZ 30PPM	
X701	5XEX4R000C	CRYSTAL QUARTZ	HC-49U 4.0000MHZ (TP)	
Y801	5SC0101003	SW RELAY	DG12D1-0(M)-II 1C-1P	⚠
Z101	5PMKT40MA-	FILTER CERA	MKT40MA100P	
ZA01	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA02	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA03	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA04	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA05	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA06	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA07	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA08	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA09	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA10	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZZ400	PTMAMSD228	PCB MAIN MODULE MANU	DTJ-28G6F	®
PD01	4859279820	CONN WAFER	TAC-L18P-A1 (ANGLE)	
PD02	4859279820	CONN WAFER	TAC-L18P-A1 (ANGLE)	
PD03	4859231620	CONN WAFER	YW025-03	
PD04	4853946000	BRKT JUMPER A	SECC T1.0 (VCR-63DB)	
PD05	4853946000	BRKT JUMPER A	SECC T1.0 (VCR-63DB)	
PS01	4850702N07	CONNECTOR	YH500D-02+YBNH250+USW 400	
QS01	TKTA1659Y-	TR	KTA 1659-Y	
QS02	TKTC4370Y-	TR	KTC 4370-Y	
XD01	5XE20R250E	CRYSTAL QUARTZ	HC-49/U 20.2500MHZ 30PPM	
CCD01	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD02	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD03	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD04	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD05	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD06	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012	
CCD07	HCQK121JCA	C CHIP CERA	50V CH 120PF J 2012	
CCD08	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CCD09	HCQK309CCA	C CHIP CERA	50V CH 3PF C 2012	
CCD10	HCQK309CCA	C CHIP CERA	50V CH 3PF C 2012	
CCD11	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
CCD12	HCBK473KCA	C CHIP CERA	50V X7R 0.047MF K 2012	
CCD13	HCBH224KCA	C CHIP CERA	25V X7R 0.22MF K 2012	
CCD14	HCBH224KCA	C CHIP CERA	25V X7R 0.22MF K 2012	
CCD15	HCBH224KCA	C CHIP CERA	25V X7R 0.22MF K 2012	
CCD16	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD17	HCBK122KCA	C CHIP CERA	50V X7R 1200PF K 2012	
CCD19	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD20	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CCD21	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD22	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CCD23	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD24	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CCD25	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD26	HCTAD100MB	C CHIP TANTAL	10V 10MF M 3216	
CCD27	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD28	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD29	HCFK104ZCA	C CHIP CERA	50V Y5V 0.1MF Z 2012	
CCD30	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD31	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012	
CCD32	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012	
CCD33	HCBK153KCA	C CHIP CERA	50V X7R 0.015MF K 2012	
CCD34	HCBK153KCA	C CHIP CERA	50V X7R 0.015MF K 2012	
CCD35	HCBK153KCA	C CHIP CERA	50V X7R 0.015MF K 2012	
CCD36	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD37	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012	
CCD38	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD40	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD41	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD42	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD43	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD44	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD45	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD46	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD48	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD50	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCD51	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD52	HCFK105ZCA	C CHIP CERA	50V Y5V 1MF Z 2012	
CCD53	HCBH104KCA	C CHIP CERA	25V X7R 0.1MF K 2012	
CCS01	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CCS02	HCFK103ZCA	C CHIP CERA	50V Y5V 0.01MF Z 2012	
CCS04	HCBK122KCA	C CHIP CERA	50V X7R 1200PF K 2012	
CCS06	HCBK472KCA	C CHIP CERA	50V X7R 4700PF K 2012	
CCS07	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012	
CCS08	HCQK101JCA	C CHIP CERA	50V CH 100PF J 2012	
JCD01	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCD02	HRFT000-CA	R CHIP	1/10 0 OHM 2012	

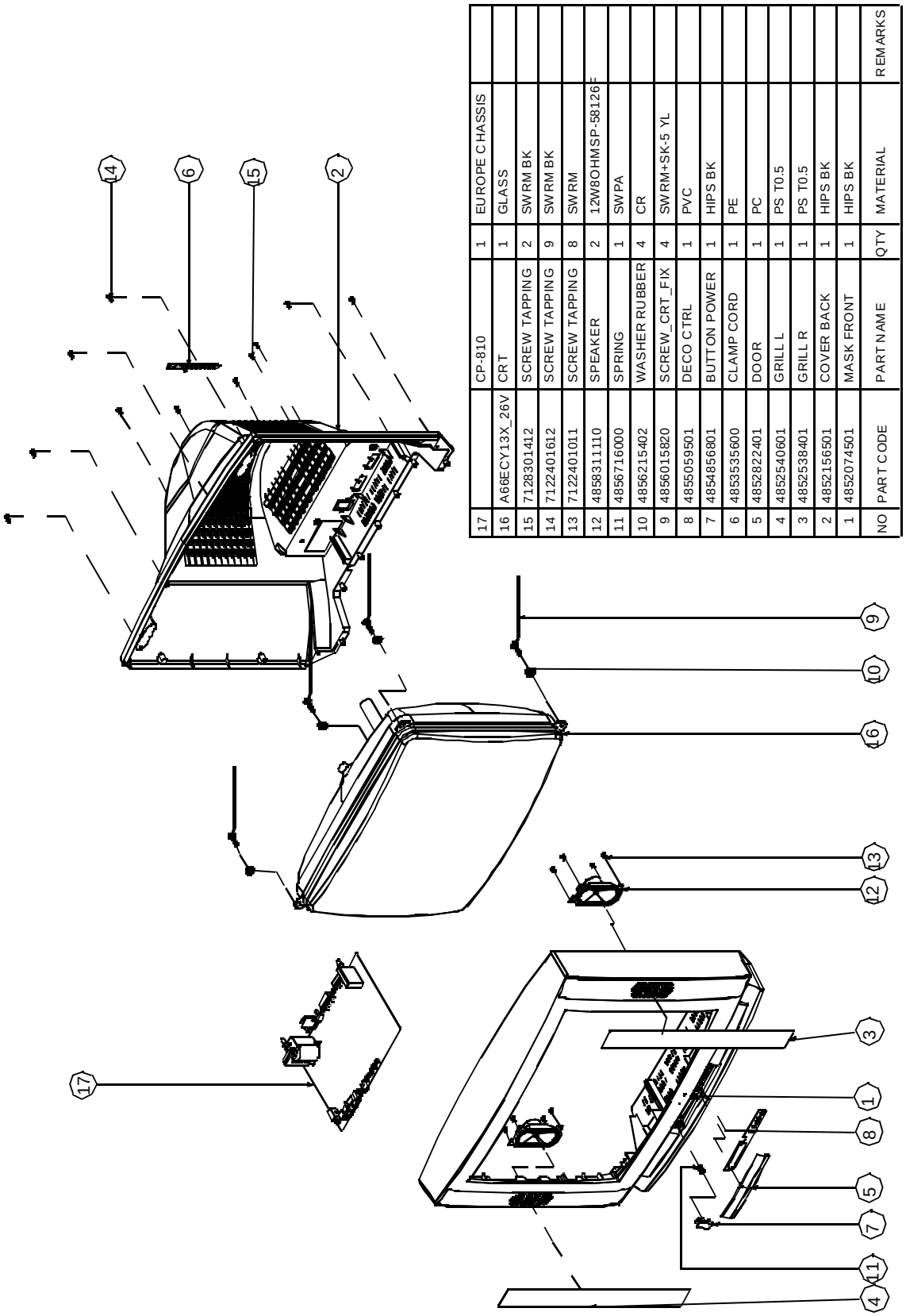
LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
JCD03	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCD04	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCD05	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCD06	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCD07	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCD08	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCD09	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCD10	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
JCD11	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
QCD01	TKTC3875GB	TR CHIP	KTC3875-GR	
QCD50	TKTC3875GB	TR CHIP	KTC3875-GR	
QCD51	TKTC3875GB	TR CHIP	KTC3875-GR	
QCD52	TKTC3875GB	TR CHIP	KTC3875-GR	
QCD53	TKTC3875GB	TR CHIP	KTC3875-GR	
QCD57	TKTC3875GB	TR CHIP	KTC3875-GR	
QCD58	T2SA812T2B	TR CHIP	2SA812-T2B	
QCD59	T2SA812T2B	TR CHIP	2SA812-T2B	
QCD60	T2SA812T2B	TR CHIP	2SA812-T2B	
QCD61	T2SA812T2B	TR CHIP	2SA812-T2B	
QCS01	TKTC3875GB	TR CHIP	KTC3875-GR	
QCS02	TKTC3875GB	TR CHIP	KTC3875-GR	
QCS03	TKTC3875GB	TR CHIP	KTC3875-GR	
QCS04	TKTC3875GB	TR CHIP	KTC3875-GR	
QCS05	TKTC3875GB	TR CHIP	KTC3875-GR	
QCS06	T2SA812T2B	TR CHIP	2SA812-T2B	
QCS07	TKTC3875GB	TR CHIP	KTC3875-GR	
QCS08	TKTC3875GB	TR CHIP	KTC3875-GR	
QCS09	TKTC3875GB	TR CHIP	KTC3875-GR	
QCS10	TKTC3875GB	TR CHIP	KTC3875-GR	
QCS11	TKTC3875GB	TR CHIP	KTC3875-GR	
RCD01	HRFT750JCA	R CHIP	1/10 75 OHM J 2012	
RCD02	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RCD03	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RCD04	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD05	HRFT470JCA	R CHIP	1/10 47 OHM J 2012	
RCD06	HRFT102JCA	R CHIP	1/10 1K OHM J 2012	
RCD07	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RCD08	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RCD09	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD10	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD14	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD15	HRFT271JCA	R CHIP	1/10 270 OHM J 2012	
RCD16	HRFT162JCA	R CHIP	1/10 1.6K OHM J 2012	
RCD17	HRFT363JCA	R CHIP	1/10 36K OHM J 2012	
RCD18	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD19	HRFT750JCA	R CHIP	1/10 75 OHM J 2012	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
RCD20	HRFT750JCA	R CHIP	1/10 75 OHM J 2012	
RCD21	HRFT750JCA	R CHIP	1/10 75 OHM J 2012	
RCD22	HRFT750JCA	R CHIP	1/10 75 OHM J 2012	
RCD23	HRFT750JCA	R CHIP	1/10 75 OHM J 2012	
RCD27	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD28	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD29	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD30	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD31	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD32	HRFT161JCA	R CHIP	1/10 160 OHM J 2012	
RCD33	HRFT161JCA	R CHIP	1/10 160 OHM J 2012	
RCD50	HRFT431JCA	R CHIP	1/10 430 OHM J 2012	
RCD51	HRFT431JCA	R CHIP	1/10 430 OHM J 2012	
RCD52	HRFT431JCA	R CHIP	1/10 430 OHM J 2012	
RCD53	HRFT431JCA	R CHIP	1/10 430 OHM J 2012	
RCD54	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD55	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD56	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD57	HRFT101JCA	R CHIP	1/10 100 OHM J 2012	
RCD61	HRFT152JCA	R CHIP	1/10 1.5K OHM J 2012	
RCD62	HRFT151JCA	R CHIP	1/10 150 OHM J 2012	
RCD63	HRFT151JCA	R CHIP	1/10 150 OHM J 2012	
RCD64	HRFT151JCA	R CHIP	1/10 150 OHM J 2012	
RCD65	HRFT151JCA	R CHIP	1/10 150 OHM J 2012	
RCS01	HRFT223JCA	R CHIP	1/10 22K OHM J 2012	
RCS02	HRFT621JCA	R CHIP	1/10 620 OHM J 2012	
RCS03	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	
RCS04	HRFT273JCA	R CHIP	1/10 27K OHM J 2012	
RCS05	HRFT333JCA	R CHIP	1/10 33K OHM J 2012	
RCS06	HRFT103JCA	R CHIP	1/10 10K OHM J 2012	
RCS07	HRFT201JCA	R CHIP	1/10 200 OHM J 2012	
RCS08	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	
RCS09	HRFT471JCA	R CHIP	1/10 470 OHM J 2012	
RCS10	HRFT182JCA	R CHIP	1/10 1.8K OHM J 2012	
RCS11	HRFT392JCA	R CHIP	1/10 3.9K OHM J 2012	
RCS12	HRFT392JCA	R CHIP	1/10 3.9K OHM J 2012	
RCS13	HRFT273JCA	R CHIP	1/10 27K OHM J 2012	
RCS14	HRFT563JCA	R CHIP	1/10 56K OHM J 2012	
RCS15	HRFT100JCA	R CHIP	1/10 10 OHM J 2012	
RCS16	HRFT820JCA	R CHIP	1/10 82 OHM J	
RCS17	HRFT820JCA	R CHIP	1/10 82 OHM J	
RCS19	HRFT000-CA	R CHIP	1/10 0 OHM 2012	
RCS20	HRFT122JCA	R CHIP	1/10 1.2K OHM J 2012	
RCS21	HRFT152JCA	R CHIP	1/10 1.5K OHM J 2012	
RCS22	HRFT473JCA	R CHIP	1/10 47K OHM J 2012	
RCS23	HRFT683JCA	R CHIP	1/10 68K OHM J 2012	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
RCS24	HRFT122JCA	R CHIP	1/10 1.2K OHM J 2012	
RCS25	HRFT152JCA	R CHIP	1/10 1.5K OHM J 2012	
RCS27	HRFT229JCA	R CHIP	1/10 2.2 OHM J 2012	
RCS28	HRFT123JCA	R CHIP	1/10 12K OHM J 2012	
RCS29	HRFT100JCA	R CHIP	1/10 10 OHM J 2012	
CD01	CEXD1E100F	C ELECTRO	25V RND 10MF (5X11) TP	
CD02	CEXD1E100F	C ELECTRO	25V RND 10MF (5X11) TP	
CD03	CEXD1E100F	C ELECTRO	25V RND 10MF (5X11) TP	
CD04	CEXD1H339F	C ELECTRO	50V RND 3.3MF (5X11) TP	
CS01	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
CS02	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
CS03	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CS04	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
CS05	CEXE2A100C	C ELECTRO	100V RU 10MF (8X11.5) TP	
CS06	CCXB2H472K	C CERA	500V B 4700PF K (TAPPING)	
LD01	5CPX100K04	COIL PEAKING	10UH K ELC0607RA	
LS01	5MC0000100	COIL BEAD	HC-3550	
LS02	5MC0000100	COIL BEAD	HC-3550	
LS03	5MC0000100	COIL BEAD	HC-3550	
RS01	RD-4Z200J-	R CARBON FILM	1/4 20 OHM J	
RS02	RD-4Z200J-	R CARBON FILM	1/4 20 OHM J	
RS03	RD-4Z471J-	R CARBON FILM	1/4 470 OHM J	
RS05	RD-4Z331J-	R CARBON FILM	1/4 330 OHM J	
ID01	1VPC3215CT	IC CHIP VIDEO	VPC3215C	
ID02	1C1P3250AT	IC CHIP VIDEO	CIP3250A	
ID03	1SDA9255EQ	IC CHIP	SDA9255E+	
ID04	1DDP3310BT	IC CHIP	DDP3310B	

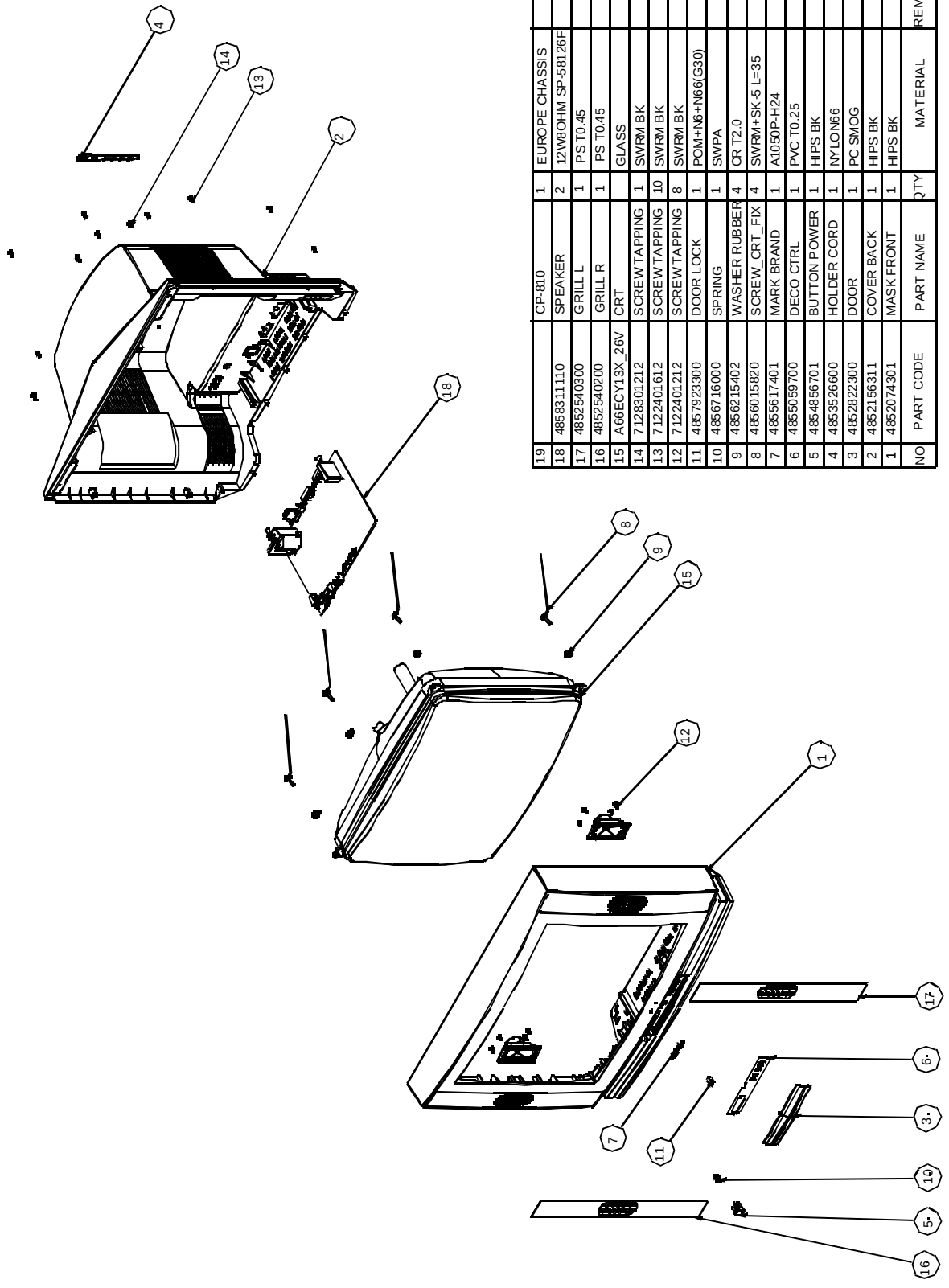
8. Mechanical Exploded View

1. DTJ-28A6F



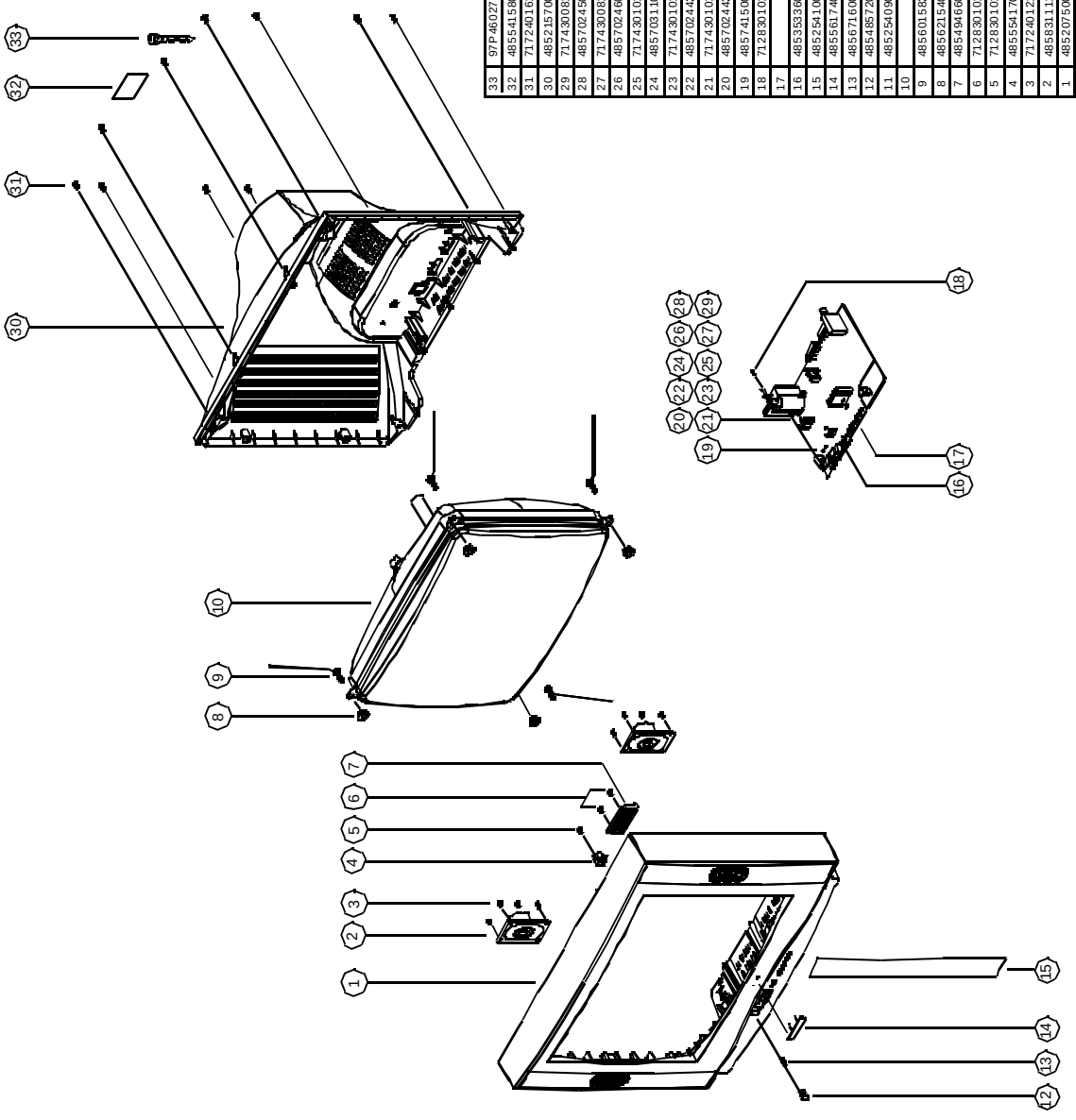
NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
17		CP-810	1	EUROPE CHASSIS	
16	A66ECY13X_26V	CRT	1	GLASS	
15	7128301412	SCREW TAPPING	2	SWRM BK	
14	7122401612	SCREW TAPPING	9	SWRM BK	
13	7122401011	SCREW TAPPING	8	SWRM	
12	4858311110	SPEAKER	2	12W8OHMSP-58126F	
11	4856716000	SPRING	1	SWPA	
10	4856215402	WASHER RUBBER	4	CR	
9	4856015820	SCREW_CRT_FIX	4	SWRM+SK-5 YL	
8	4855059501	DECO CTRL	1	PVC	
7	4854856801	BUTTON POWER	1	HIPS BK	
6	4853535600	CLAMP CORD	1	PE	
5	4852822401	DOOR	1	PC	
4	4852540601	GRILL L	1	PS T0.5	
3	4852538401	GRILL R	1	PS T0.5	
2	4852156501	COVER BACK	1	HIPS BK	
1	4852074501	MASK FRONT	1	HIPS BK	

2. DTJ-28A7F



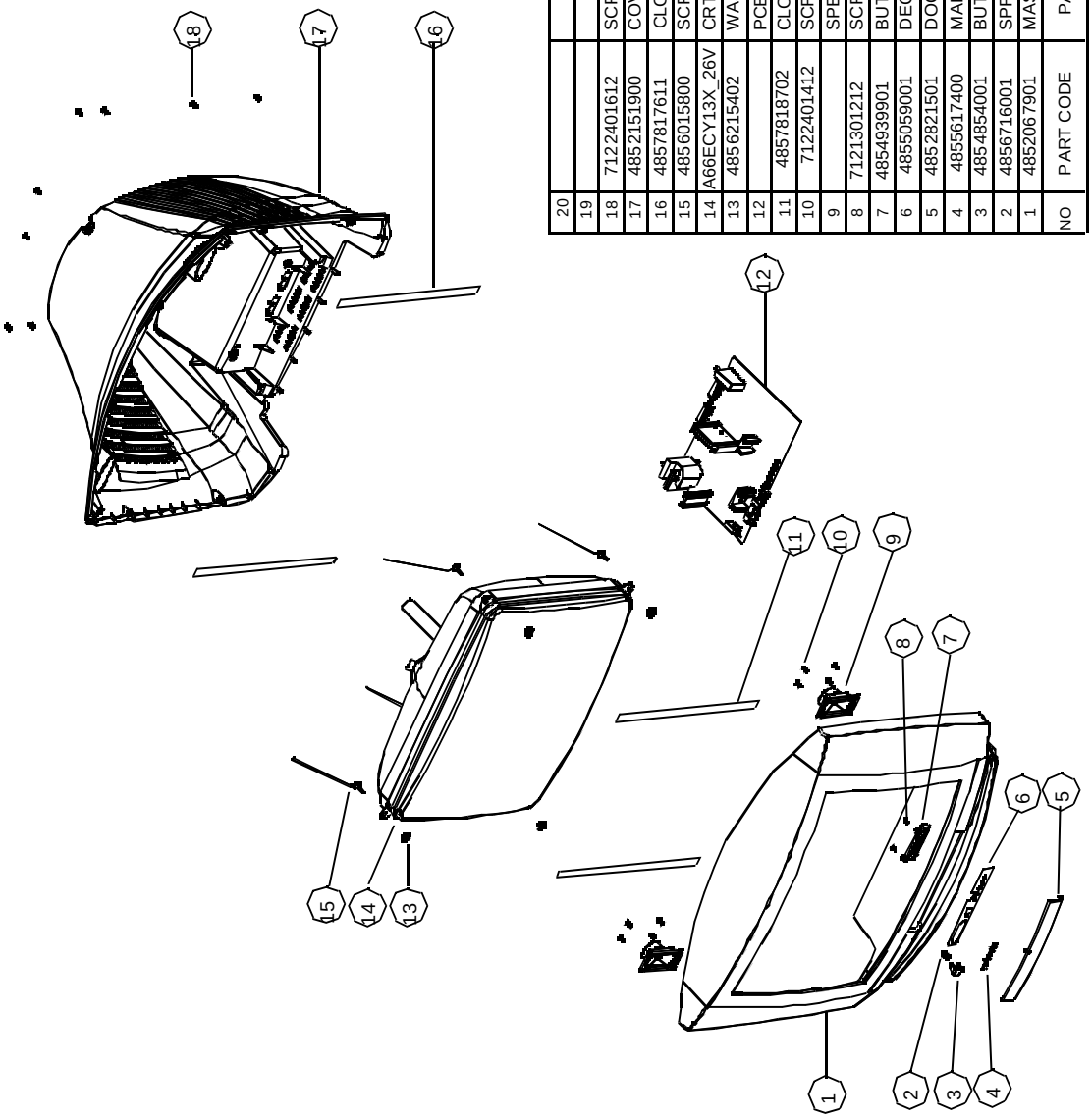
NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
19		CP-810	1	EUROPE CHASSIS	
18	4858311110	SPEAKER	2	12W8OHM SP-58126F	
17	4852540300	GRILL L	1	PS T0.45	
16	4852540200	GRILL R	1	PS T0.45	
15	A66ECY13X_26V	CRT		GLASS	
14	7128301212	SCREWTAPPING	1	SWRM BK	
13	7122401612	SCREWTAPPING	10	SWRM BK	
12	7122401212	SCREWTAPPING	8	SWRM BK	
11	4857923300	DOOR LOCK	1	POM+N6+N66(G30)	
10	4856716000	SPRING	1	SWPA	
9	4856215402	WASHER RUBBER	4	CR T2.0	
8	4856015820	SCREW_CRT_FIX	4	SWRM+SK-5 L=35	
7	4855617401	MARK BRAND	1	A1050P-H24	
6	4855059700	DECO CTRL	1	PVC T0.25	
5	4854856701	BUTTON POWER	1	HIPS BK	
4	4853526600	HOLDER CORD	1	NYLON66	
3	4852822300	DOOR	1	PC SMOG	
2	4852156311	COVER BACK	1	HIPS BK	
1	4852074301	MASK FRONT	1	HIPS BK	

3. DTJ-28B1F



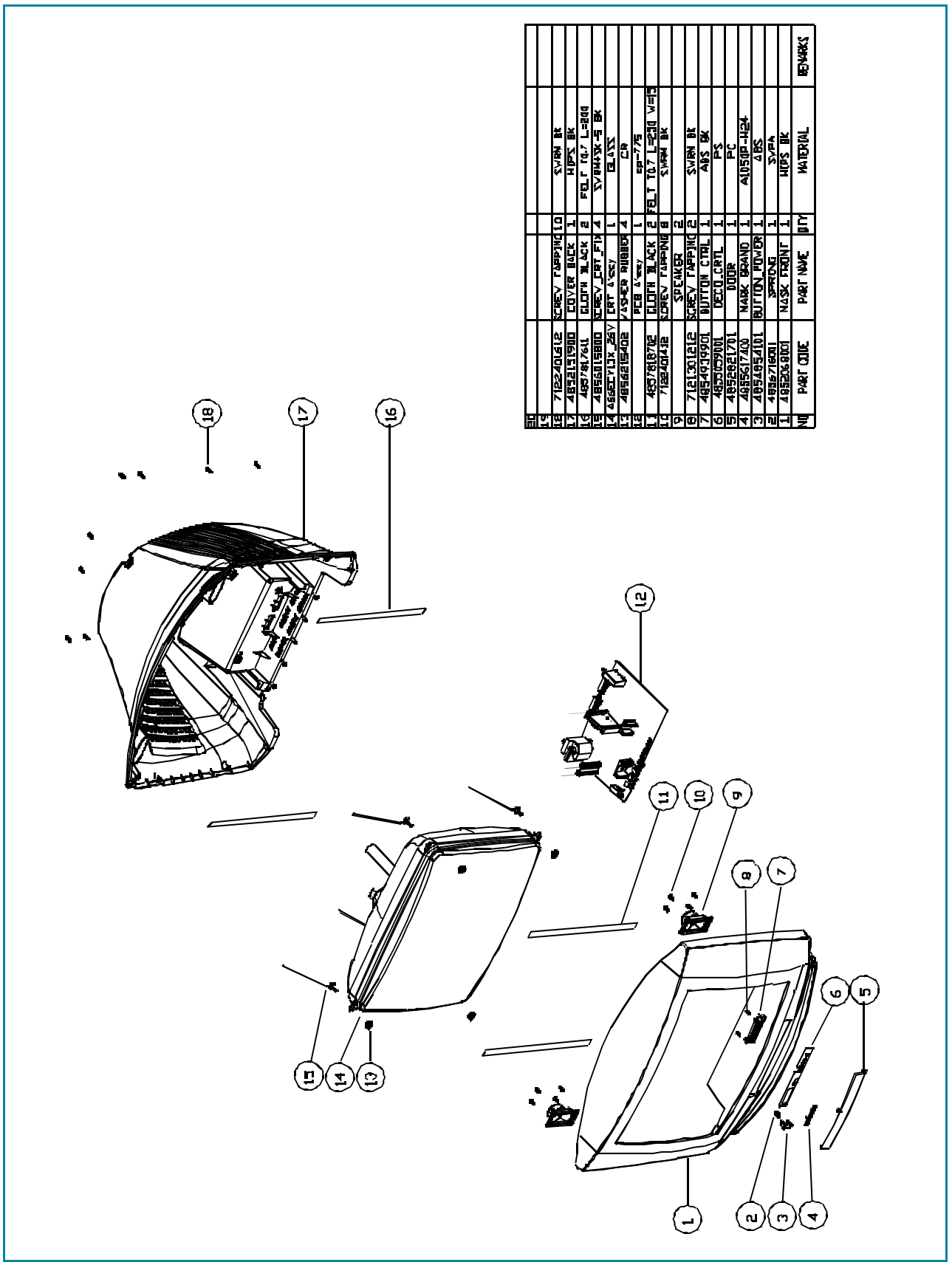
No	PART CODE	PART NAME	Qty	MATERIAL	REMARKS
33	97P4602700	CLAMP CORD	1	NYLON 66 BLK 5280N	
32	4855415800	SPEC PLATE	1	150ART PIE FILM(C/TV)	
31	7172401612	SCREW TAPPTITE	10	T+2 TRS 4X16 MFZN BK	1+30
30	4852157001	COVER BACK	1	HIPS GY	
29	7174300811	SCREW TAPPTITE	1	T+2 RND 3X8 MFZN	
28	4857024500	HEAT SINK	1	AL EX B/K	
27	7174300811	SCREW TAPPTITE	1	T+2 RND 3X8 MFZN	
26	4857024600	HEAT SINK	1	AL EX B/K	
25	7174301011	SCREW TAPPTITE	1	T+2 RND 3X10 MFZN	
24	4857031100	HEAT SINK	1	A1050P-H24 T2.0	
23	7174301011	SCREW TAPPTITE	2	T+2 RND 3X10 MFZN	
22	4857024422	HEAT SINK	1	AL EX	
21	7174301011	SCREW TAPPTITE	2	T+2 RND 3X10 MFZN	
20	4857024422	HEAT SINK	1	AL EX	
19	4857415001	CLIP FUSE	2	PFC5000-0702	
18	7128301011	SCREW TAPPING	1	T+2S WAS 3X10 MFZN	17+30
17		CHASSIS	1	CP-810	
16	4853533600	HOLDER LED	1	P.P BK	
15	4852541000	GRILL SPKR R	1	PS	
14	4855617401	MARK BRAND	1	AL(SILVER)	
13	4856716000	SPRING	1	SWPA PIE 0.5	
12	4854857201	BUTTON POWER	1	ABS GY	
11	4852540900	GRILL SPKR L	1	PS	
10		CRT	1	PHILIPS 28"	
9	4856015820	SCREW CRT FIX	4	SWRM+SK5 L=35	1+10
8	4856215402	WASHER RUBBER	4	CR T2.0	
7	4854946601	BUTTON CH	1	ABS GY	
6	7128301011	SCREW TAPPING	2	T+2S WAS 3X10 MFZN	1+7
5	7128301011	SCREW TAPPING	1	T+2S WAS 3X10 MFZN	1+4
4	4855541700	DECO SENSOR	1	PMMA	
3	7172401212	SCREW TAPPTITE	8	T+2 TRS 4X12 MFZNCK	1+2
2	4858311110	SPEAKER	2	12W 8 OHM SP-58126F	
1	4852075001	MASK FRONT	1	HIPS GY	

4. DTJ-28G6F



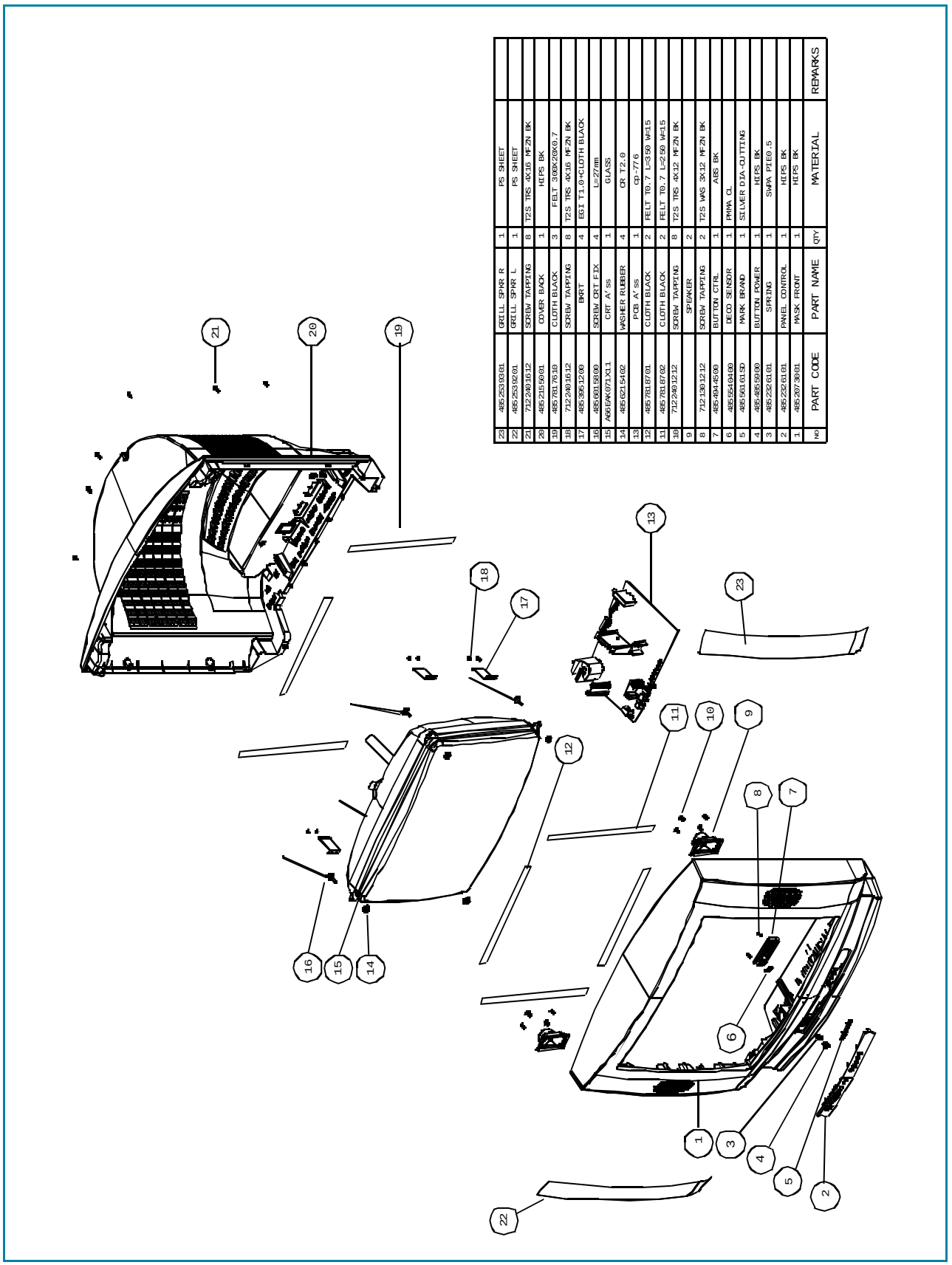
NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
20					
19					
18	7122401612	SCREW TAPPING	10	SWRM BK	
17	4852151900	COVER BACK	1	HIPS BK	
16	4857817611	CLOTH BLACK	2	FELT T0.7 L=200	
15	4856015800	SCREW_CRT_FIX	4	SWRM+SK-5 BK	
14	A66ECY13X_26V	CRT A'ssy	1	GLASS	
13	4856215402	WASHER RUBBER	4	CR	
12		PCB A'ssy	1	cp-775	
11	4857818702	CLOTH BLACK	2	FELT T0.7 L=250 W=15	
10	7122401412	SCREW TAPPING	8	SWRM BK	
9		SPEAKER	2		
8	7121301212	SCREW TAPPING	2	SWRM BK	
7	4854939901	BUTTON CTRL	1	ABS BK	
6	4855059001	DECO_CRTL	1	PS	
5	4852821501	DOOR	1	PC	
4	4855617400	MARK BRAND	1	A1050P-H24	
3	4854854001	BUTTON_POWER	1	ABS	
2	4856716001	SPRING	1	SWPA	
1	4852067901	MASK FRONT	1	HIPS BK	

5. DTJ-28G7F



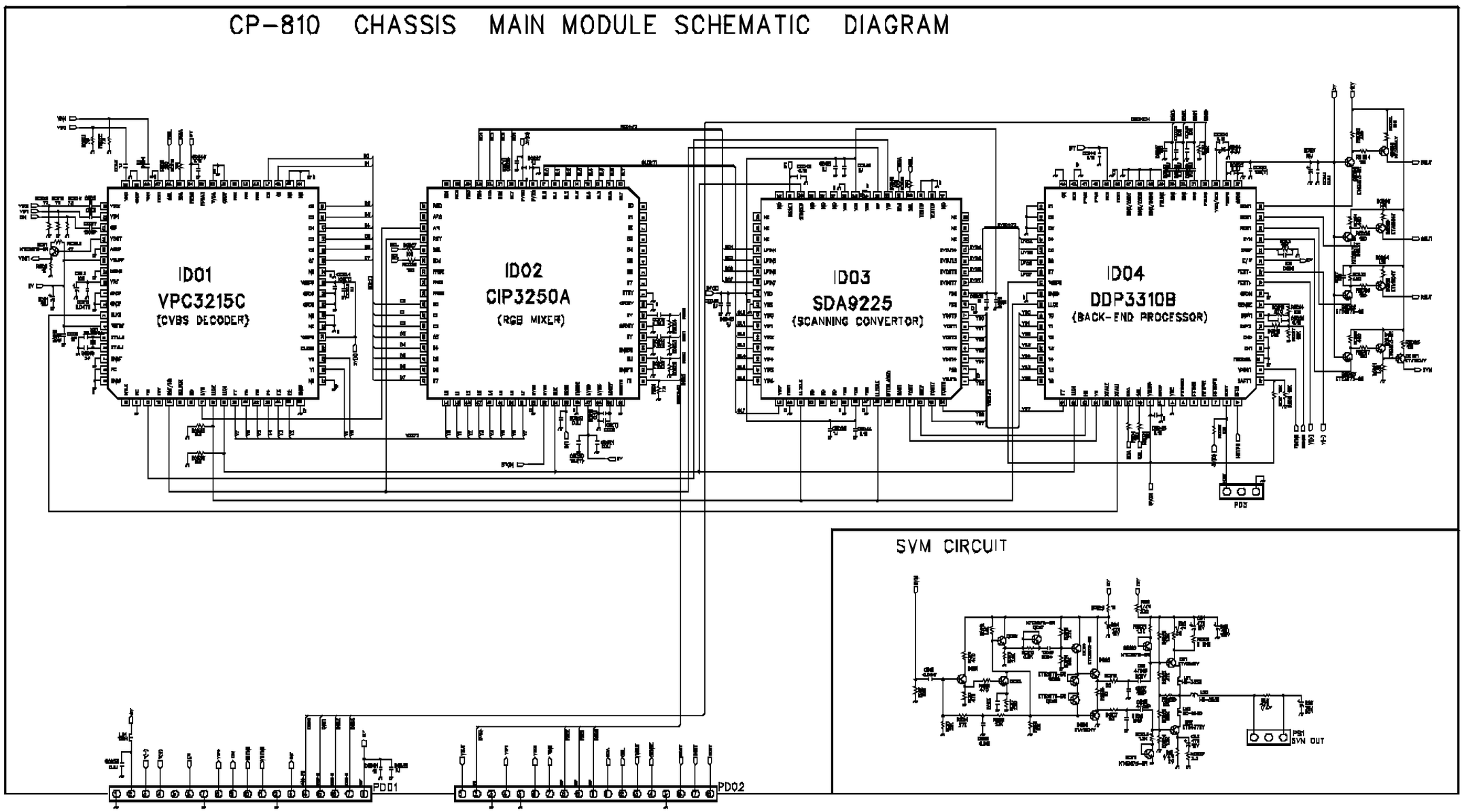
NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
1	4852063001	MASK_FRONT	1	HIPS BK	
2	4856716001	SPRING	1	SYPA	
3	4854854101	BUTTON_POWER	1	ABS	
4	4855617400	MARK_BRAND	1	ADS5P-H24	
5	4852021701	DOOR	1	PC	
6	4853059001	DECO_CNTL	1	PS	
7	4854491990L	BUTTON CTRL	1	ABS BK	
8	7121301212	SCREW_TAPPING	2	SVBN BK	
9		SPEAKER	2		
10	7122401412	SCREW_TAPPING	8	SVWH BK	
11	4857818702	CLOTH_BLACK	2	FELT T0.7 L=210 W=15	
12	4856211402	RUBBER_STAND	4	CR	
13	4852151900	COVER BACK	1	HIPS BK	
14	4857817611	CLOTH_BLACK	2	FELT T0.7 L=200	
15	4856011580D	SCREW_CAP_FIX	4	SVBM4SX-5 BK	
16	4645C1131_25V	ANT ASSY	1	GLASS	
17	7122401612	SCREW_TAPPING	10	SVBN BK	
18					

6. DTJ-28G8F



NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
23	485253303101	GRILL SPKR R	1	PS SHEET	
22	485253302101	GRILL SPKR L	1	PS SHEET	
21	712240816112	SCREW TAPPING	8	T2S TRS 4X16 MFZN BK	
20	485215090101	COVER BACK	1	HIPS BK	
19	485781776101	CLOTH BLACK	3	FELT 300X200X0.7	
18	712240816112	SCREW TAPPING	8	T2S TRS 4X16 MFZN BK	
17	485385112000	BKT	4	EGI T1.0+CLOTH BLACK	
16	485691590300	SCREW CRT FIX	4	L=27mm	
15	A66EAK071X11	CRT ASS	1	GLASS	
14	485621154102	WASHER RUBBER	4	CR T2.0	
13		PCB ASS	1	CP-776	
12	485781877101	CLOTH BLACK	2	FELT T0.7 L=350 W=15	
11	485781877102	CLOTH BLACK	2	FELT T0.7 L=250 W=15	
10	712240812112	SCREW TAPPING	8	T2S TRS 4X12 MFZN BK	
9		SPEAKER	2		
8	712130812112	SCREW TAPPING	2	T2S WAS 3X12 MFZN BK	
7	485484545100	BUTTON CTRL	1	ABS BK	
6	485554104100	DECO SENSOR	1	PMMA CL	
5	485560161SD	MARK BRAND	1	SILVER DIA-CUTTING	
4	485485590100	BUTTON POWER	1	HIPS BK	
3	485232661601	SPRING	1	SWPA PIE0.5	
2	485232661101	PANEL CONTROL	1	HIPS BK	
1	485207360101	MASK FRONT	1	HIPS BK	

10. Printed Circuit Board



CP-810 SCHEMATIC DIAGRAM

Major components

- I604 DPL3519A-A2
- I606 MSP3410D
- I601 TDA7269
- I605 KA4558
- I701 ST92195A
- I101 TDA-4470M
- I301 TDA-8172
- I901 TEA5101B
- I801 STR-F6654
- I802 LTV-817C
- I803 SE140N
- I804 KA7805
- I807 KA7812
- I808 KA7808
- I809 UPC574J
- I810 KA2201
- I702 AT24C16
- I703 TSOP1238WI1
- I704 KIA7042P
- SF01 G3962M
- SF02 K9650M
- T802 2094.0028 TSM-4936A9
- T401 TD-25A1
- T402 1372.0036
- Q401 BUH1015H
- Q403 KTD-2058Y
- TU01 EL2782-105B

Connectors

- HP01 (TO A/V PCB) P603
- JPA03 AV3 — P502 (TO A/V PCB)
- JPA01 SOCKET RGB AV1
- JPA02 SOCKET RGB AV2/S
- P501 / P901 / P902 / P903
- JPA05 DOLBY JACK
- SW601 EXT. SLIDE S/W
- SP01 / SP02 — P601 (TO SPEAKER)
- P702 (TO CTRL PCB)
- P703 (TO PRE AMP PCB)
- P503 / P504 (TO MODULE PCB)
- P802 COIL DEGAUSSING
- P801 CORD POWER
- P101 AGC ADJ.
- P102 AFT ADJ.
- P401 (TO CRT PCB)

Notes

CAUTION "LIVE MAINS"

HOT

COLD

DAEWOO

DAEWOO ELECTRONICS CO., LTD

686, AHYEON-DONG MAPO-GU
SEOUL, KOREA
C.P.O. BOX 8003 SEOUL, KOREA
TELEX : DWELEC K28177-8
CABLE : “DAEWOOELEC”